

NATIONAL FISHERMAN

JUNE
1960

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Can't wash out - Can't wear off

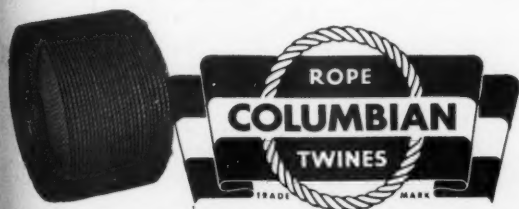


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Ready at an instant, this new U.S. Rubber inflatable raft provides the kind of protection and safety needed in all kinds of weather, on all kinds of seas. Constructed of the same materials as the U.S. Navy, Bureau of Ships, 15-man life raft, according to Military Specifications MIL-L-19496 (SHIPS), U.S. Rubber's "Fisherman's Special" is a raft of the highest quality and maximum durability.

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The Lookout

Intensified Fishing Effort

In citing the worldwide increase in fish production from 24 to 33 million metric tons between 1953 and 1958, Roger T. Hager, president of Fisheries Council of Canada recently states:

"We are faced with a growing world catch and an intensified fishing effort by many of the major producing countries.

"We have heard many pronouncements from scientists over the years to the effect that the world cannot feed itself from the land alone, and stressing that the last large source of protein available for harvest is in the seas.

"Whether or not the increased fishing effort is due to lack of protein is not too material, unless it bears directly on the future rate of expansion. Some things would indicate that it does.

"It is also possible that countries which could greatly expand their agricultural production, through improved techniques, might find it more economical to increase protein production from the sea, at least as long as this source remains plentiful and capable of being harvested economically.

"In short, therefore, we can take for granted an increasing degree of competition from other nations for the fish off our own shores".

Earlier this year Canadian Fisheries Minister J. Angus MacLean declared that periodic self appraisal and precise future planning were particularly timely now, when world events are moving so fast and when practically every fishing country is engaged in building new and more modern fleets so that they can better share in the ocean's harvest to help feed their expanding populations.

This increase in fishing effort and efficiency on virtually all of the known fishing grounds, including those which Canadian fishermen have come to think of almost as their own, will add not only to the already serious competition experienced by fishermen on the grounds, but can affect Canada's markets as well.

It is agreed that rapid development in Canada of improved gear and catching methods has been made imperative by the increasing competition from other countries on international fishing grounds off both the Atlantic and Pacific coasts.

The United States fishing industry is faced with many of the same problems as outlined by the Canadian officials, and it behooves our fisheries to take steps to improve their competitive position. We should be alert to every opportunity for assuring ourselves of a modern, efficient fishing fleet.

NATIONAL FISHERMAN

The Fishing Industry Magazine

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June 1960

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P. G. LAMSON
President

GARDNER LAMSON
Publisher and Editor

D. M. STRICKLAND
Managing Editor

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SAN PEDRO and SEATTLE SKIPPERS SALUTE STARR NYLON NETTING

as Tuna and Salmon Catches Increase



TONY MIHOVLOVIC, Captain of 86 ft. Combination Boat "MURAUDE" reports: "I've been using A. M. STARR Nylon Nets for the past four years, and you just can't beat them. Last year we made seven trips for tuna, and our total catch was 840 TONS. I particularly like Starr Netting because it has extreme strength with lightness of weight and is so easy to handle. Starr Nets are the most dependable of all and there's only a minimum amount of upkeep."



TERRY TARABOCHIA, Captain of Gillnetter "BALLERINA" reports: "My Starr Net was very successful on *Humpies* in 1959. We increased our catch at least 50 per cent over other years when I fished with other nets. You just can't beat STARR NYLON NETTING for fishing."



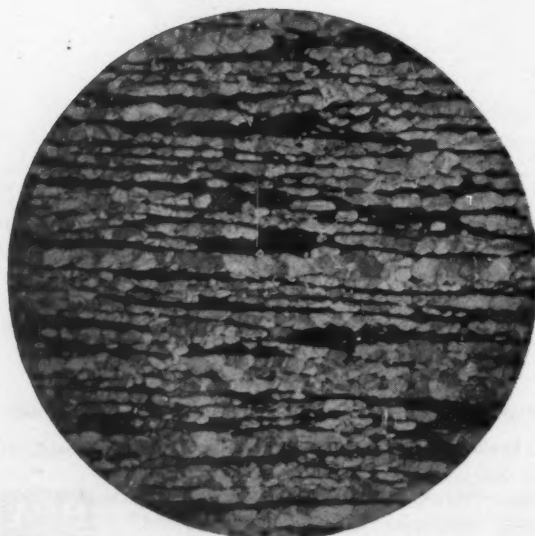
STARR NETTING . . . STAR PERFORMANCE

Another in a new series of Starr advertisements direct from the fishermen using Starr Nylon Netting.



A. M. STARR NET CO.
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FISHERY PROGRESS

► Vessel Construction Subsidy

The compromise version of House and Senate Conferees on the fishing vessel construction subsidy bill passed in the Senate by unanimous consent has been called back. The recall was made, at the request of Senator Lausche of Ohio, who desired an opportunity for floor debate to speak in opposition to the bill.

The compromise version would provide a Federal subsidy in fishing vessel construction for vessels in a fishery which had been denied escape clause relief, as well as to vessels in a fishery not eligible for escape clause proceedings when the Interior Department finds injury or threat of injury by reason of imports.

► Fish Marketing and Consumption

A report entitled "Fish Marketing and Consumption in the Pacific Coast States", just released for distribution by the Bureau of Commercial Fisheries, supports the thesis that food consumption habits are slow to change.

Unless influenced by advertising and education, the tendency is to continue eating those foods to which one is accustomed. So far very little fish promotion or educational work has been undertaken on the West Coast.

The opportunity to increase fish sales through advertising and educational programs appears to be rather promising, particularly in southern California where fish consumption is now very low.

► Additions to The Fleet

Twenty-four vessels of 5 net tons and over received first documents as fishing craft during March 1960, a slight drop from March 1959. The Pacific area led with 9 vessels, followed by the Gulf area with 6, and South Atlantic with 4, and the Great Lakes with 2.

The New England, Middle Atlantic, and Alaska areas accounted for the remaining 3 vessels. During the first three months of 1960 a total of 68 vessels received first documents as fishing craft.

► Canadian Fishing Limits

As a result of the Conference on the Law of the Sea failing to come to any agreement, the Fisheries Council of Canada has made the following resolution.

The Council urged that the law permitting foreign fishing boats to come within three miles of the Canadian east coast while requiring Canadian fishermen to remain outside the 12-mile limit, be repealed at the earliest possible date.

At the same time they would grant Canadian fishermen the same privileges that are enjoyed by foreign fishermen.

► Fish Portions up 31 Percent

Preliminary data indicate that the United States production of fish sticks during the first quarter of 1960 amounted, to 19.9 million pounds, while the production of fish portions totaled 11.7 million pounds.

This was a gain of 1.7 million pounds or 9 percent in fish sticks, and 2.8 million pounds or 31 percent in fish portions compared with the same quarter of the previous year.

► Oceanographic Research

Last month the Committee on Interstate and Foreign Commerce in executive session, ordered favorably, without amendment, S.2692 (Magnuson & 10 others), a bill introduced in the Senate last year for oceanographic research.

The bill is to advance the marine sciences, to establish a comprehensive 10-year program of oceanographic research and surveys; to promote commerce and navigation, to secure the national defense; to expand ocean resources; to authorize the construction of research and survey ships and facilities; to assure systematic studies of the effects of radioactive materials in marine environments; to enhance the general welfare.

► Saltonstall-Kennedy Amendment

The House bill, to reapportion funds available under the Saltonstall-Kennedy Act, would allow the Secretary of the Interior, after deducting 8 percentum for the expense of necessary investigations, administration, and execution of the Act, to allocate funds to the agencies, organizations and individuals as follows:

1. one-third in the form of grants;
2. one third in the form of contracts; and
3. one-third for apportionment on an equitable basis.

► Fishery Export Promotion

A fishery export promotion conference, sponsored by the Interior and Commerce Departments, was scheduled this month in Washington, D. C. as part of a program to promote the expansion of United States exports.

The Interior Department wants the views, support, and advice of the fishing industry, about moves the Government might make to give maximum assistance in increasing foreign fishery sales.

Also to be considered, are suggestions for specific reductions in tariffs imposed by foreign countries

which will be of greatest benefit to exporters of fishery products.

► Imports Down 23%

Imports of edible fresh, frozen, and processed fish and shellfish into the United States during February 1960 decreased by 23.1 percent in quantity and 17.3 percent in value as compared with January 1960.

The decrease was due primarily to lower imports of frozen albacore and other tuna (down 9.8 million pounds), canned tuna in brine (down 2.6 million pounds), canned salmon (down 2.2 million pounds), and frozen shrimp (down 1.1 million pounds).

Compared with February 1959, the imports in February this year were down 13.7 percent in quantity and 3.8 percent in value due to lower imports of frozen tuna other than albacore (down 10.5 million pounds), and canned tuna in brine (down 1.4 million pounds).

► New Shrimp Hearing Asked

Rep. Hale Boggs of Louisiana said he will insist upon a hearing by the House Ways and Means Committee into problems of the shrimp industry since the tariff commission hasn't come up with any recommendations.

Boggs said recently the industry needs immediate relief from mounting shrimp imports and had presented to the commission a program for an orderly system of marketing. The plan involves a system of import quotas which would be increased gradually over the years.

► Frozen Shrimp Standards

Frozen raw headless shrimp voluntary grade standards have been proposed by the U.S. Bureau of Commercial Fisheries.

The proposed standards include product description, grade, sizes; factors of quality and grade, including ascertaining the grade; definitions; lot certification tolerance; and score sheet.

Four different grades will be established: "U.S. Grade A" or "U.S. Fancy"; 2. "U.S. Grade B" or "U.S. Good"; 3. "U.S. Grade C" or "U.S. Commercial"; and 4. "Sub-standard."

The proposed standards, if recommended to the Secretary of the Interior for adoption and made effective, will be the first issued by the Department prescribing voluntary grade standards for frozen raw headless shrimp.

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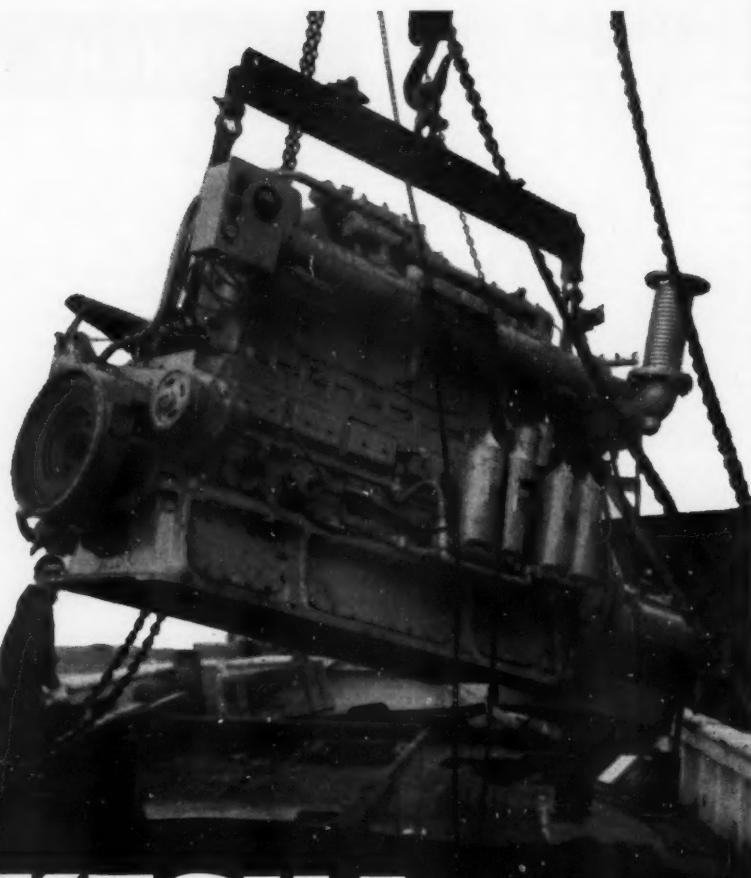
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E, 1960

Coming aboard!

**BIG POWER and
NEW PERFORMANCE**
for the 97 foot
ELEANORE & ELSIE



it's a
WAUKESHA
Defender **MARINE DIESEL**



Captain Jack Jacobs is glad to bid "welcome aboard" to the new Waukesha Diesel. The 97' x 21' x 12' scalloper dragger *Eleanore & Elsie* is taking on a smart, new look with new steel trunk, new wheelhouse at the stern and other features. Most important of all is her new engine—a Waukesha *Defender* (Model LRDBCSM) Turbosupercharged Marine Diesel that will put out 510 hp at 1215 rpm continuously per 24-hour duty day. This 2894 cubic inch engine has six cylinders, 8½ x 8½-inch bore and stroke, and is fitted with a Snow-Nabstedt reverse-reduction hydraulic gear 3:1 ratio. Installation was made by Hathaway Machinery Co., Inc., of Fairhaven, Mass. Waukesha dependability pays off—in power and in profits—send for bulletins.

WAUKESHA MOTOR COMPANY
Waukesha, Wisconsin

New York • Tulsa • Los Angeles
Factories: Waukesha, Wisconsin and Clinton, Iowa

483

How Tidal Power Project Would Affect Fish

No important herring supply change foreseen from Passamaquoddy Dams; improved conditions for alewife, scallop, and lobster propagation*

THE Passamaquoddy tidal power project is not expected to cause any great change in the total economy of the area's fisheries, according to studies recently completed by the International Passamaquoddy Fisheries Board. Some fisheries (salmon and shad, etc.) will increase; a few will decline; some processing plants may have to be moved, or have their facilities modified. With respect to the entire fishing economy, it is felt that the net effect of constructing the dams will be slight. The 140 square mile Passamaquoddy Bay area lies on the international boundary between Maine and the Province of New Brunswick, Canada.

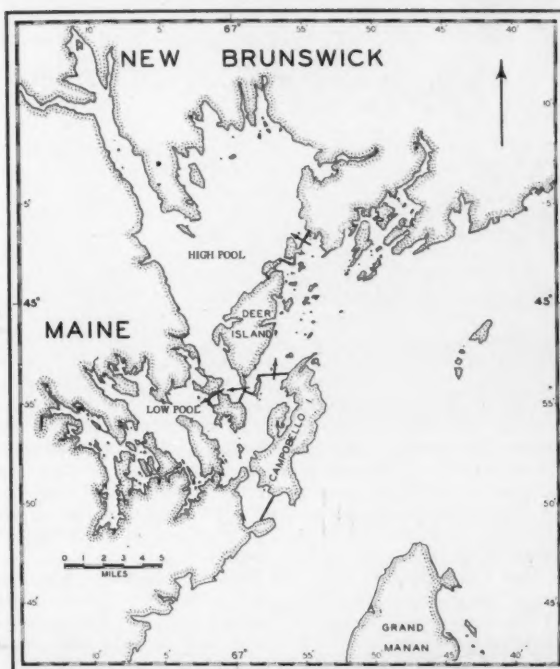
In 1956, the International Joint Commission was asked by the Governments of the United States and Canada to consider the possibility of using the tidal forces in Passamaquoddy and Cobscook Bays to produce hydroelectric power. It was found that to control the extreme Passamaquoddy tides for effective power production, two basins would be required. The rise and fall of the tides averages 18 feet, with a range of 14-28 ft. The basins, a high and a low-level pool, would be formed by dams placed at strategic points. Gates in the dams would empty and fill the pools at predetermined times. Thus, a gradient would be maintained between the two pools, and water flowing from the upper pool to the lower would be forced through turbines to produce power.

The Commission established an International Passamaquoddy Fisheries Board, with two American and two

* By Leslie W. Scattergood, laboratory director, and John E. Watson, fisheries research biologist at the U.S. Fish & Wildlife Service, Bureau of Commercial Fisheries Biological Laboratory, Boothbay Harbor, Me.



Maine fishermen operating a seine in a sardine weir near Passamaquoddy area where proposed tidal power dams may be constructed.



Map of Passamaquoddy tidal power project area showing position of proposed dams (heavy lines).

Canadian members, to study the effect of the proposed tidal power structures on the important fisheries in the Passamaquoddy Region. For nearly two years, a team of American and Canadian scientists made extensive studies of the oceanographic and biological conditions then prevailing, as well as of the economic status of the commercial fisheries in the Passamaquoddy area of southern New Brunswick and eastern Maine. Most of the work done in the Quoddy Region, which includes all of the area inside the line from Point Lepreau, N. B., to Northern Head, Grand Manan, N.B., thence to West Quoddy Head, Maine.

As a result of their investigations, oceanographers predicted little change in the waters outside the dams; but they predicted that the water inside the dams would be colder in winter, with the possibility of ice cover, and that water temperatures would be higher in summer, perhaps reaching 68°F. in contrast to the present high of 55°. The surface waters would be less salty. This would be particularly the case during heavy fresh-water discharges from the rivers into proposed pool areas.

Study Effect on Herring

Since young herring, or "sardines", are the basis of an important industry in the area, considerable attention was given to this species during the investigations. A number of interesting facts were discovered about the sardine. One important finding was that Quoddy sardines are produced outside the Quoddy area—probably off southwest Nova Scotia. Thus, it is unlikely that the general abundance of these fish in the Gulf of Maine could be seriously affected.

Length and age studies of the herring were made and they demonstrated that sardines are about 5" long in their first year, and about 7" long in their second year of life. These are the sizes taken for sardine packing.

Studies of the sardines' blood composition indicated that the Quoddy sardines belong to a different strain

(Continued on page 27)

Trawling Proves Successful on Great Lakes

**Offers increased and more profitable utilization of fish supply
Operations closely supervised to insure protection of resources**

With the recent introduction of trawl nets on the Great Lakes, a revolutionary development is underway which may bring increased production and stability to the commercial fisheries of this region. Heretofore, Great Lakes fishing has been done with gill nets, trap nets and lines, all of which have certain limitations, being particularly affected by weather conditions. While most of the Great Lakes trawling operations thus far have been on an experimental or trial basis, they have created considerable interest among fishermen, who foresee economic advantages and opportunities.

Last month the Michigan Conservation Commission voted to allow commercial fishermen to use trawls for taking chubs, herring, alewives, smelt and other non-game fish. It gave Director Gerald E. Eddy authority to issue permits and set regulations for the use of this type of gear in Michigan waters of the Great Lakes. Because of legal steps necessary to take before the new ruling can become effective, no trawling is expected to begin in lower Lake Michigan before July.

The Commission's attitude was to approach trawling on a "go slow and experimental basis." A large majority of the commercial fishermen agreed with the Commission in limiting trawling to the lower half of Lake Michigan, south of a line westward from Ludington.

Feel Trawling Would Improve Industry

When Michigan's commercial fishermen appealed to the State Conservation Commission recently for permission to use otter trawls, they emphasized that using the gear would improve business and make them more competitive with other Great Lakes fishermen.

Explaining that gill nets are becoming obsolete, their cost is too high for taking small fish, and that trawls would result in steadier supplies, fresher material, and quicker processing. Dr. James W. Moffett, U. S. Fish and Wildlife Service lamprey control head, declared that trawlers on other Lakes find ready markets for chub and trash fish.

On Lake Erie, several boats began commercial exploitation of smelt within the past year, and in addition, several fishermen have shown an interest in trawling for other species, as a result of the Bureau of Commercial Fisheries successful 1959 demonstration of commercial scale production, with trawls.

The Canadian Government has also been interested in the new fishery, and has encouraged the operation of



Trawl-caught chubs, smelt and alewives aboard the "Art Swaer" off Sheboygan, Wisconsin. The Lake Michigan boat operates trawl nets under special state permit.

trawlers in the north shore of Lake Erie. Consequently there are over 30 trawlers ready to start fishing for smelt, almost the year 'round.

Research has found that the deep water area centered off Port Dover, Ontario, constitutes one of the most dense smelt populations known. W. F. Kolbe & Co., Ltd., of Port Dover plans to stagger the arrival of its Diesel trawlers as the firm takes advantage of the smelt trawling fisheries.

The Company feels smelt may become one of the ten major tablefood fishes. Kolbe plans to freeze the fish



"Active", 50' trapnet boat converted by Bureau of Commercial Fisheries, Sandusky, Ohio for experimental trawling.



A section of an echogram showing layer of smelt off the bottom of Lake Erie. Smelt are stratified by water temperatures.

within five minutes of landing, and to package single frozen and layer packs, headless and round smelt that are graded for size for the consumer and institutional trade. Griffin's Associated Fisheries of Milwaukee, Wis., has been appointed the company's national sales representative.

Wisconsin Trawling by Permit Only

At present, experimental fishing is being done in Wisconsin waters of Lake Michigan under the supervision of L. W. Wiegert, fishery manager, Wisconsin Conservation Department, Green Bay, Wis., and three commercial fishermen in the vicinity of Sheboygan and Port Washington, according to Edward Schnebinger, superintendent, Fish Management Division, Wisconsin Conservation Department.

Although the three fishermen are not subsidized in any way, they receive limited assistance from the Bureau of Commercial Fisheries in the form of advice. Trawling operations are also being conducted for sheepshead on Lake Winnebago under the supervision of Richard F. Harris, Wisconsin Conservation Dept. fishery area supervisor at Oshkosh.

Because the use of otter trawls is contrary to Wisconsin law, a special permit has been issued to each of the fishermen so that he may carry on the experimental work. They are allowed to take any species for which there is an open season, but so far the majority of catches has been chubs (ciscoes), smelt, and alewives. The fish taken are sorted with 10 to 15 percent being used for human consumption and the balance being sold for animal food.

With the cooperation of the fishermen, the Wisconsin Conservation Department has been able to gather much valuable information on the effect of trawling. Reports indicate the fishermen are taking fish which otherwise would not be caught. Chubs have increased greatly due to the lack of trout and burbot, and should be taken to keep a proper balance in the fish population. It is agreed, however, that more information is needed before a proper evaluation of the fishery in Lake Michigan is possible.

Arthur Swaer of E. C. Swaer & Son, Oconto, Wis., who fishes out of Sheboygan, was the first to receive a permit to conduct experimental otter trawling in Wisconsin's Lake Michigan waters in 1955. His 65' boat *Art Swaer* was the first to be successful with the new type fishing, although at the beginning some problems were encountered in getting the gear to function properly and trawling was limited due to rocks.

Swaer began trawling in Green Bay on a regular basis two years ago and was the first to move into open lake waters when he left the Bay area last fall. His net is made of synthetic material and is 75' long and equally wide. The mesh measures 2½" in the wings and 1½" in the cod end. Nine 10" aluminum floats are used. Swaer's boat is equipped with a two-drum, Model 515 Stroudsburg hoist.

A number of Stroudsburg hoists have been purchased by other fishermen in Wisconsin, Michigan, and Ontario in anticipation of increased trawling activities in the near future. Most of the hoists are in the small or medium size range, with the majority being of double drum design. A few have three-drum models, the third drum being used for hoisting the lazy line to bring the catch aboard. Diameters of wire rope towing cables generally used are 5/16" and 3/8".

Three Stroudsburg hoist models are represented on Great Lakes boats. The 515 has a 1000-pound hoisting capacity on a single line and the main drum has a 900-foot capacity for ¾" cable. The 515½ has a main drum which holds 850 feet of ½" cable and a hoisting power of 1500 pounds. The 518 can lift 3000 pounds on a single line with 2000 feet of ½" cable on the main drum. This model is a special design with fabricated steel base.

Among those owning Stroudsburg hoists include Susie Q. Fish Co., Two Rivers; Koss Bros. Fisheries, Milwaukee; Norman G. Johnson, Port Wing; Cayner Fisheries, Port Washington, (3 drum—515½); Seger Fish Co., Sheboygan, (3 drum); Jensen Fisheries, Kenosha: all of Wisconsin.



Preparing to land cod end of smelt on the Bureau of Commercial Fisheries "Active" on Lake Erie.

sin; Peel Fisheries, Saugatuck; Murray Chambers, Holland; Chambers Bros., Holland: all of Michigan; and Weaver Bros., Nanticoke, and W. F. Kolbe & Co., Ltd., Port Dover, Ont.

Frank Miller of Milwaukee, Wis., who owns the 75' former Texas trawler *McGinty* and the 55' *Kevinerin*, and Joseph Cayner, who owns the 55' *Mor-su*, fish in the same area as Swaer. The boats are doing well with about 20,000 pounds per overnight trip. The average has been 6-9000 pounds for a seven-hour day. This year the boats fished through the winter. At present the Conservation Department has received about 11 applications for trawling permits and is contemplating issuing 10.

May Stabilize Erie Smelt Fishery

The markedly seasonal aspects of production of smelt from Lake Erie waters, and the resulting seasonal market glut, may be a thing of the past according to William G. Gordon, chief, Bureau of Commercial Fisheries Exploratory Fishing and Gear Research Station, Sandusky, Ohio. In a report on the Erie smelt trawling developments, Gordon stated that the Lake Erie smelt fishery was previously confined to spawning areas, chiefly in Canada, and was limited to a few short weeks in the spring.

(Continued on page 30)



A deckload of Lake Erie smelt averaging 10-12 to the pound aboard the converted trawler "Active".

New Multi-Purpose 50-Footer in Nova Scotia

Designed for gill netting, seining, longlining, scalloping and swordfishing

A NEW multi-purpose boat, the 50-foot Pictou, Nova Scotia-built *Unique* is designed to fill the gap in traditional fishing models between the small thirty-foot inshore craft and the sea-going longliners and druggers and is specifically arranged for diversified fishing. Gear which can be used aboard her includes an automatic gill-net lifter to handle cod and haddock gillnets; Danish seining and longlining gear; and equipment for mackerel or herring seining, scallop fishing and swordfishing.

The boat is sponsored by the Nova Scotia Department of Trade and Industry and the Federal Department of Fisheries and the design was worked out by architects of the National Research Council in cooperation with L. C. Boehner, Supervisor of Nova Scotia's fishermen's training program. Technical assistance on gear was given by the Department of Fisheries' Industrial Development Service.

This latest addition to Nova Scotia's expanding fishing capacity was built as a working model for a projected fleet which some feel may determine the future of inshore operations in the Maritime Provinces.

The idea for this revolutionary type of fishing craft originated with Boehner and Capt. Rafn Josefsson, an Icelandic-Canadian fisherman who has been working seasonally as a gear instructor with the fisheries division of the Nova Scotia Department. Josefsson is buying the boat and will be fishing it. Its performance will be studied by the interested branches of government.

Boehner and Josefsson both believe that inshore fishermen in the Maritime Provinces need a boat that permits diversity of operation. Cost is the key factor and a medium has to be struck. While it is agreed that the cost of such a craft must necessarily be greater than that of the conventional "Cape Island" boat, it should be kept well below the figure for a sixty footer.

The *Unique* embodies many features which are new to Nova Scotia's inshore fleets. The wedge-shaped hull has fine fore-and-aft lines which permit smooth entrance at the bow and direct flow of water to the propeller. A soft bilge in the mid-section improves stability at sea, especially when loaded. Depth of the hull underwater when loaded is about 6'; unloaded, 5'. Moulded depth from top of deck to bottom of keel is 8'6".

Another feature is a relatively low-powered diesel, 76 hp. at 1800 rpm. It is calculated that this low-cost engine will provide the required speed on a moderate consumption of fuel. The auxiliary engine, 31 hp. at 2000 rpm., is of the same type as the propulsion unit and their parts interchangeable. The engine is in the extreme stern, living quarters forward and fish hold in the middle section. As the boat takes on a cargo of fish, she will trim evenly.

The underwater depth of 5' to 6' will decrease drift, especially when gillnets, long-lines, trawls, etc. are being handled. An unusually large working platform has been provided. The actual working area for deck operations is 286 square feet plus another 100 square feet in the slaughter house. Total area of the deck from bow to stern is 526 square feet.

Insulated Aluminum Hold

The plastic foam-type insulation adds greatly to the buoyancy of the craft. Insulation four inches deep is used under the deck with a two-inch depth around the sides and the foreward and aft bulkheads. These bulkheads are of 1½" plastic-coated marine plywood and are watertight. Sides of the hold are covered with 5/16 inch plastic-coated plywood and floor of the hold is made of

½ inch corrugated aluminum. Pen boards are also made of aluminum.

Ventilation in the hold is provided as follows: outside air is taken in through an air trunk six feet above deck and is drawn into the engine room by a fan and discharged through the air trunk surrounding the engine exhaust six feet above deck. A suction fan on the main motor circulates air between the skin of the ship and the bilge. An automatic refrigeration unit is being installed to keep the hold temperature at approximately 33-34 degrees.

All possible care has been taken to improve living conditions of the crew. Spacious living quarters, finished in plastic-coated marine plywood, are arranged in the fo'c's'le, which is warmed by a propane heater. The boat can be flooded rail to rail without water getting into the fo'c's'le. The galley is furnished with a modern propane stove with oven and grill, a stainless steel sink and an arborite counter-top. Toilet, wash basin and shower with hot and cold water are installed in the bow. The pilot house is constructed with heavily reinforced plywood.

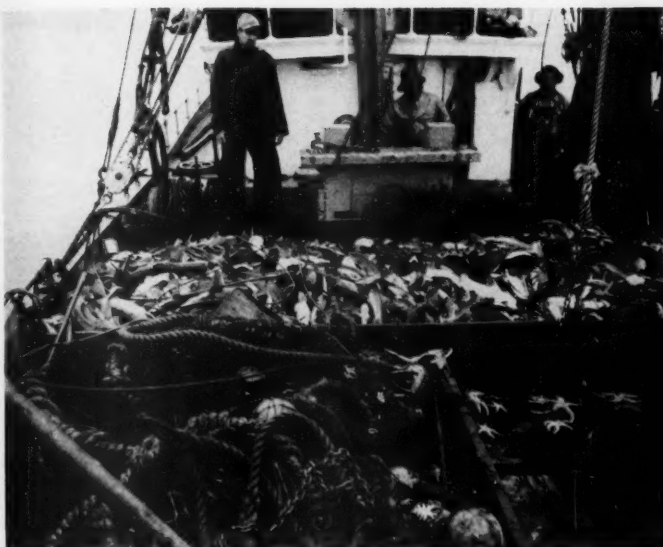
Another singular feature is the very rugged construction throughout. The keel is 8" by 12" oak. Oak timbers 1½" by 2½" in size are fastened to a 5" x 12" oak apron which is bolted to the keel. If the keel is damaged, it can be removed and replaced. The boat is not a stern post type. It has a solid oak block from the underside of the horn timber to the top of the apron. Where the stern block meets the apron, it is 8" thick; where it meets the underside of the horn timber, it is 12" thick. The horn timber is placed on top of the stern block and this assembly is fastened to the keel by four pairs of ¾" galvanized steel through-bolts.

Another innovation is the exhaust system, for which the 18' steel mast is utilized. Inside the mast a 4" pipe serves as an exhaust for the main engine, with the outlet 15' above deck, while another pipe 2½" in diameter, with the outlet 6' above deck, is an exhaust for the auxiliary

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50' Canadian fishing boat "Unique", designed for diversified operations and equipped with a variety of fish-catching gear, at launching in Pictou, Nova Scotia.



Left: approximately 4,000 pounds of menacing dogfish, landed in two hauls by trawler near Dana Pt., Wash., in Puget Sound. Right: another haul being brought aboard trawler in Washington waters. Bounties and possible human food markets are being sought for the shark.

Potential Market for Menacing Dogfish

Pacific Coast Firm Develops Practical Process for Canning Dogfish for Use as Consumer Food Product

Promoting commercial uses for dogfish is the best way to combat that shark's menacing of Pacific Northwest fisheries, Robert McCarthy, president of the Patent & Process Development Corp., Seattle, Wash., asserted recently. The company has announced the development of a canning process which makes dogfish usable as a food product. At the same time, McCarthy took issue with a recommendation by the Washington Department of Fisheries that Congress establish a bounty on dogfish.

"While we do not argue with the claim that these fish have become a nuisance, or even a menace to commercial fishing, we are absolutely convinced that these fish have a value which far exceeds any now attributed to them", McCarthy wrote to Milo Moore, director of the Washington Fisheries Department.

McCarthy said due to the progress being made in obtaining machinery which will make the canning of dogfish commercially feasible, a bounty on dogfish would do irreparable harm to the more profitable fishery that he believes can be established in the immediate future.

Because the dogfish hasn't been fished commercially for 14 or 15 years, the species is multiplying dangerously. The shark eats valuable fish and crabs, destroys nets and swallows bait and hooks. Male dogfish grow to a maximum length of about four feet and to a weight of eight pounds. Females, more deadly and disagreeable than the males attain lengths up to five feet and weights up to 20 pounds.

Dogfish Once Valuable Fishery

Although now worthless, dogfish were of considerable value to Indians before white men came to the Pacific Northwest. Later, the pioneers used dogfish oils for illumination and lubrication. Dogfish brought \$5 to \$6 a ton delivered to rendering plants. The average recovery of oil was 32 gallons to a ton of fish processed, the livers yielding from 70 to 78 percent of oil by weight.

When kerosene was introduced to Pacific Northwest markets in 1856, dogfish oil took second place in pioneer lamps. Then an illuminating gas plant was built in Seattle,

Wash. in 1873, and fish oil slid farther back. In that year, 60,000 barrels of dogfish oil were extracted on Puget Sound, but most of it was shipped to tanneries or was sold to loggers for skid grease.

When a vitamin craze swept the country shortly before the Second World War, chemists found that dogfish livers were loaded with vitamin A. Thousands of fishermen went after dogfish with otter trawls and set-lines.

Production of dogfish livers reached 320,000 pounds in 1940; jumped to 2,350,000 pounds in 1941, slackened off slightly the following year, and reached a peak of 2,794,000 pounds in 1943. In that year, the dogfish catch netted Puget Sound fishermen \$1,290,000. Prices topped 54 cents a pound for livers. However, the boom subsided abruptly when two industrial chemists discovered methods of manufacturing vitamin A by synthesis. The discovery killed Puget Sound's fish-liver business.

The Patent & Process Development Corp. often has taken issue with recommendations of the Washington Fisheries Department to the Congress that a Federal bounty of \$10 be placed on a ton of dogfish shark carcasses and 10 cents a pound for livers. The company brought its case directly to the attention of the House Committee when hearings on the bill were being conducted.

Reasons given by the company for resisting the bounty bill were that dogfish had far greater value than could be realized by the addition of a federal subsidy to the small per-ton price now paid for the species; and that if by some chance the bounty program were successful, it could result in the depletion or destruction of a natural resource for a minimum gain before thorough examination of commercial use had been realized.

It is possible, McCarthy said, that some manner of chemically processing the shark into meal or fertilizer could be successful, if the government paid a substantial part of the cost of the raw material. But, he explained, the quantities of fish required for such an operation would cause rapid depletion of the best available stocks, which his company intends to use as food.

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SOUTH ATLANTIC

Florida Oyster Industry Making Good Comeback

The Apalachicola Bay (Fla.) oyster is staging a comeback after 10 years during which the oyster industry showed a decline—mostly the result of a serious drought. During the present season just ended, the biggest crop of oysters was harvested since World War II. And from all indications, the next two or three years will bring the greatest opportunity yet for the oyster industry in the Northern Gulf of Mexico, according to Robert Ingle, research director of the State Board of Conservation.

One of the principal factors in resurgence of the industry has been heavy rains of the past three years. From 1948 to 1956, the industry was struck by a severe drought and the supply of good oysters dwindled. Another factor in resurgence of the industry here has been rigid enforcement by the State Conservation Board of the three-inch size limit for taking oysters, thus giving the animals a chance to grow and multiply.

As to the future, Ingle sees the Florida oyster industry in its best position ever to move ahead and prosper. As reasons for this belief, he cited the decline in several large producing areas in other sections of the United States and an increasing demand by consumers for good oysters.

Currently, the oyster industry in Florida grosses about two million dollars each season, and acre for acre it is Florida's most valuable crop, according to Ingle. Of all marine products produced in the nation, oysters rank 56th in volume but fourth in value, emphasizing their high monetary value.

Many feel the potential oyster crop in Florida is worth millions of dollars. In northern climes four or five years are usually required for an oyster to reach its most valuable size, whereas Apalachicola Bay produces a select size in a year and a half, due to the warm climate.

Ingle believes the future of the Florida oyster industry lies in the ownership and cultivation of private oyster leases. Under this system, he says, a controlled product can be produced and many of the irregularities that now plague the industry can be eliminated. Water bottoms, suitable for growing oysters, can be leased from the State for 50 cents an acre per year.

Maryland Fisheries Commission Meeting Covers Shell Plants, Surveys, Legislation

In action taken at a recent meeting, the Maryland Tidewater Fisheries Commission approved a planting program to place 4,450,000 bushels of oyster shells on bars and beds by July 15 to catch a new crop of baby oysters. This will be three times the amount planted in previous years and most of the shells will be mined from beneath the mud of Chesapeake Bay and transported to planting areas. Half will be dumped into seed-growing areas of the Holland Straits and the other half onto public rocks.

Conducting a survey of bottoms of Worcester County waters with a view to preserving present clamming bottoms and still providing enough grounds for leasing to oyster planters was agreed upon. Byrd said oysters presently are not planted under leasing arrangements in Worcester, although authorized by law, and that planters do not have protection which would otherwise be afforded by law.

A program of study to be worked out this summer with a special committee of the Legislative Council was discussed at length. The commission expressed hope it could begin these meetings shortly in order to name subcommittees, to consist of TFC members and council members, who could work on various aspects of new legislation.



George W. Nelson's 50' shrimper "Josie N." has a 165 hp. General Motors Diesel for power. A 5-blade Federal propeller is turned through 3.75:1 reduction gear. She is equipped with Danforth anchor, White Constellation compass, Raytheon radiotelephone and depth sounder, Roebling wire rope, Linen Thread nets, Metal Marine automatic pilot, and Stroudsburg hoist. She is finished with Gloucester Sea Jacket paint.

Maryland Scientists Survey Oyster Beds To Prevent Introduction of Disease

Maryland and federal scientists are trying to find whatever is causing oyster deaths in Chesapeake Bay, which may be the dead micro-organism known as "MSX" that has caused heavy losses in Delaware Bay. MSX also has been detected in Virginia waters but never in Maryland. State Research Director L. Eugene Cronin announced recently that two teams of four men each—working in two boats—are checking about 200 selected oyster bars on the bay and its Maryland tributaries. There has been no indication of the blight.

In another phase of the full-scale search, 13 lookout stations have been established in Maryland waters to keep an eye out for any signs of oyster mortality. Cronin said his agency has worked closely with the U. S. Fish & Wildlife Service, as well as authorities in Virginia and New Jersey.

Slides of oyster tissue are being prepared and examined at Solomons and the federal laboratory as the group goes from area to area. Teams have been in the Potomac River and then moved into the Holland Straits and Tangier Sound off Somerset County.

The checking stations, which will be examined every week to 10 days throughout the spring, summer and fall, were set up in areas of high oyster density, where MSX is known to strike, and throughout a wide range of water salinity.

To Form Advisory Council of Watermen

Tidewater Fisheries Commission chairman, H. C. Byrd, has announced plans to form an advisory council of 20 to 25 watermen. It will meet with the commission from time to time to help formulate policy and solve problems of the industry.

The advice of people who have been making their living from the water will be invaluable in far-reaching and sound conclusions, said Byrd. The council to be appointed within the next several weeks, would represent all phases of water life, including recreation. The Commission would expect to consult with it, Byrd said, on shell and seed planting, opening and closing of fishing seasons, use of various kinds of gear, packaging and marketing of seafood and in all other phases of the seafood industry.

Byrd said the TFC eventually hopes to appoint similar but smaller councils in each of the tidewater counties to work with the State group.

Leffler Outlines Diversified Fishing for Shrimp Boats

Addressing the recent Southeastern Fisheries Association 8th annual convention in Miami, Fla. Assistant Secretary of the Interior Ross Leffler stated that some new avenues for utilization of Gulf fishery resources have opened with the fantastic growth of the industrial fishery along the Gulf Coast. This is the fishery for species used in the manufacture of fish meal, for canned pet food, or other similar purposes. The Bureau of Commercial Fisheries exploratory fishing vessels have been engaged in evaluating the potential of several species of herring-like fish which will meet these needs.

The Bureau is also experimenting with types of fishing gear suitable for use on the ordinary shrimp vessel in taking these fish, Leffler said. The objective is to provide some diversification of fishing by shrimp vessels, and their profitable utilization during off-seasons for shrimp. Considerable promise is being found in adaptation of various types of lampara nets.

The Bureau's market promotional programs have been especially aimed at market improvement for several Gulf fishery products and particularly for mullet and Spanish mackerel in Florida, Ross continued. Coping with the long-time problem of heavy seasonal production and frequent surpluses of mullet and Spanish mackerel, both excellent fish, the Bureau marketing personnel have been working very closely with the industry in promoting these items. They believe there is some improvement as a result of special attention to these species in the very recent Lenten fisheries promotional campaign.

There also have been reports of rather sizable movements of Spanish mackerel filets, as well as stocks of mullet, out of producers' hands into consumer channels. There is a tremendous potential in the development of greater consumer utilization of these fish and contingent upon this, a substantial potential for even greater production of these species from coastal waters.

Maryland Catch Value up 27 Percent

For the first three months of the year, figures show Maryland watermen landed 8,246,000 pounds with a value of \$3,700,000, compared to 9,000,000 pounds and \$2,900,000, from January through March last year. This is an increase of 27 percent in value, but a decline of 9 percent in volume.

The United States Bureau of Commercial Fisheries reported recently that total fish and shellfish landings in the State for March were 2,700,000 pounds, which brought \$1,000,000 to the watermen. While the catch was 1,100,000 pounds less than in March 1959, its total dollar value was \$100,611 higher.

Watermen landed 4,900,000 pounds of oyster meat (824,298 bushels) at Maryland packing houses from January through March, the U. S. Bureau of Commercial Fisheries reported. This was 1,136,000 pounds or 192,257 bushels more than for the first three months last year despite a drop in March because of bad weather. In dollar value, the oyster landings were worth \$3,067,000, an increase of \$1,048,000 from January-March, 1959.

Soft clam production rose sharply in March, with 315,384 pounds valued at \$99,000. This was a 66 percent increase over March, 1959.

To Study Oyster Washing Methods

Maryland State College in Princess Anne has been awarded a grant of \$10,000 for research in the washing of oysters in the shell before they are shucked, and in handling shucked oysters in relation to bacteria count. The grant is from the Dept. of Health, Education and Welfare, Public Health Service.

The experiment will endeavor to find the most efficient and least expensive way to wash shell oysters to keep the bacteria count down. Tests will be made of oysters and mud before washing, after washing on the boats and



FLORIDA SHRIMPER "GEMINI" is powered with a D-342 Caterpillar engine rated 150 hp. at 1225 rpm. which turns a 48 x 36 Columbian propeller through 3:1 Snow-Nabstedt reduction gear. Owned by Joseph T. Thompson the 58' boat is equipped with Columbian cordage, Northill anchor, Apelco radiotelephone, Ritchie compass, and 515½ Stroudsburg hoist. She fishes out of Key West.

at the packing plants, and as brought to the packing house window by the shucker, to be packaged.

Dr. Moses W. Vaughn, project supervisor of the Agricultural Department of Maryland State College, will handle the project, and will be assisted by Awdry W. Jones, graduate in agriculture from the college.

Committee Studies Maryland Seafood Laws

Egbert L. Quinn, editor of the Crisfield Times and member of the House of Delegates from Somerset, has been named chairman of a special committee on seafood legislation by the Maryland Legislative Council. The committee is to study the present laws governing the seafood industry with special reference to their effectiveness in plans for rehabilitating the industry, and to determine what, if any, changes should be made and also to study the State's facilities for research.

Non-Resident S. C. Licensing Law Eased

The licensing of non-resident shrimp boats will be easier this year, according to G. Robert Lunz, Director of the Division of Commercial Fisheries for South Carolina. Last year the law required that non-resident shrimp boat owners pay all income tax due the State of South Carolina before a license could be issued. This law has been repealed.

Lunz said that the new law in no way exempts shrimp boat owners of paying income tax due the State, but it is no longer necessary to show proof of tax paid before a shrimping license can be issued. Along with each shrimp boat license this year, resident and non-resident alike, the Division of Commercial Fisheries plans to issue a memorandum release from the South Carolina Tax Commission. This will instruct the boat owner how, when and where to file his income tax and give condensed information on withholding taxes of employees on shrimp boats.

North Carolina Considers Inland Dredging

North Carolina fishermen can dredge for clams until July in Bogue and Core sounds, the Newport River and in Pamlico Sound west of Long Shoal and Gull Island. The commercial fisheries committee of the North Carolina State Department of Conservation and Development said it would decide in July if the dredging had a detrimental effect on the sound or river bottoms. If no harmful effects are found, it said it would consider permanently authorizing inland clam dredging.

Man-Made, Natural Safeguards Stop Atomic Pollution Rise

The Virginia Health Department said recently that there are adequate safeguards, both natural and man-made, to prevent a rise in radioactivity caused by dumping of surplus cooling water from atomic ships in the Hampton Roads areas in Virginia waters.

R. H. Mansur, director of the Department's Bureau of Industrial Hygiene, and other department officials said that Navy regulations, prohibit the discharge of surplus reactor cooling water above a certain level of radioactivity, and the limit imposed voluntarily by the Newport News Shipbuilding and Dry Dock Co. is far more strict than the Navy regulations.

Dumped cooling water is diluted further as soon as it is mixed with the sea water, they said, and a large amount of any dumped in Hampton Roads would be carried out to sea. They also noted that as time passes, radioactive material loses radioactivity. Before this water is dumped, it is run through an ion exchange which removes most of the radioactivity, and then is checked for remaining radioactivity.

Mansur and the other department officials emphasized that there is no reason to believe that the nuclear-powered ships will increase radioactivity. In fact, they said, if there are no future nuclear weapons tests, the radioactivity should drop. All of the officials reiterated, that the department does not expect radioactivity to increase, and that therefore there would be no increase of radioactivity in plankton-type seaweed or oysters.

North Carolina Oyster Season Exceptional

State Fisheries Commissioner C. G. Holland said the North Carolina oyster season, the most successful since 1947, provided the brightest fishing news of the year. "Despite the weather," he said, "the production of oysters this season was 25,000 more tubs than the previous season and price and quality were unusually good."

Another highlight of the winter seasons were catches of clam and scallops in ocean waters, according to the commissioner, who said: "When the boats were able to work, large catches were made providing employment of hundreds of women and men in the shucking houses."

Virginia Draggars Doing Well

Draggers in the Hampton Roads area have been doing well, making unusually good catches of fluke and porgies. Several of the large vessels have gone North for Summer fishing, and among them is Harvey Phillips' *Louise*, which will operate out of Boston.

Scallop production at Portsmouth continues active, and the dragger *Sol Fass*, owned by Isaac Fass, Inc., and skippered by Capt. Tony Pinello, has changed to scalloping.

Latest figures show that the Hampton Roads, Va., boat landings during May 1960 topped the same month of the previous year by 437,000 lbs. for a total of 2,620,000 lbs. Responsible for the rise were increases in scup (porgy) of 724,000 lbs. to total 2,093,000 lbs. and in mixed fish which showed 11,200 lbs. landed for a rise of 7,000 lbs.

Virginia Fish Landings Increasing

The total fish catch in the Hampton Roads area for April 1960 was 5,147,000 pounds compared to 4,159,400 pounds for April 1959. In the lower Northern Neck area, the catch was 2,651,000 in April 1960 as compared to 1,624,000 in April 1959 and on the Eastern Shore, the catch for April 1960 was 74,000 as compared to 53,500 for April 1959.

In Hampton Roads, the largest area, herring topped the list with 336,400 in April 1960 as compared to 60,400 in April 1959. Butterfish came next with 301,000 in April 1960 as compared to 88,300 in April 1959.

Scup (porgy) with 3,072,000 in April 1960 was higher in production than in April 1959 with 2,548,400. Fluke came next with 209,300 in April 1960 as compared to 170,400 in April 1959.



The Montauk, N. Y. 40' dragger "Gull" owned by John Steck has a 165 hp. Graymarine engine which turns a 34 x 35 5-blade Federal propeller through Twin Disc reduction gear. The boat is equipped with Danforth anchor, Bendix depth sounder and automatic pilot, Ritchie compass, and APN-9 Ioran.

Total shellfish in the Hampton Roads area for April 1960 was 706,200 as compared to 691,200 for April 1959. For the Lower Northern Neck area the catch was 2,862,600 as compared to 217,900 for April 1959. In the Eastern Shore area, total catch of shellfish for April 1960 was 229,800 compared to 167,200 for April 1959.

Scup has been plentiful, and some bass and flounders are now available, but shad fishing has been somewhat disappointing. The season began late because of the extremely cold weather which lasted until the time for high prices was over. Prices of roe held up well, but buck shad dropped.

Pound fishermen say that most of their recent catch has been scrap fish, but reportedly, better catches are beginning to come in. Spot, a local favorite, are present in the waters of Hampton and the Lower Northern Neck but they are small. Many of these fish are shipped also to adjoining states.

Shrimp Breaders Elect Ambos President

Henry Ambos, president of Trade Winds Co., Thunderbolt, Ga., was elected president of the National Shrimp Breaders Association at the recent meeting in Miami Beach, Fla. Leo Levinson, president of Ocean Products, Inc., Tampa, Fla., was named first vice-president, and Everett Rosenberg, Rubenstine & Sons, Inc., Dallas, Texas was elected to the three-fold job of second vice-president, secretary and treasurer.

Also at this meeting, the organization voted funds for an advertising and publicity campaign to promote the use of breaded shrimp through institutional outlets.

Georgia Landings up 4 Percent

Landings of fish and shellfish at Georgia ports during March 1960 totaled 1.1 million pounds, for a 4 percent increase over March of last year. Blue crabs and shad made up 91 percent of the month's catch. The shad catch of 278,000 pounds was 83,000 pounds greater than in March 1959, while blue crab landings of 756,000 pounds were less than during March 1959. Most of the shrimp catch of 47,000 pounds was taken in waters off Florida, and consisted of mixed large sizes.

Landings during the first three months of the year amounted to 3.3 million pounds, compared to 2.1 million pounds for the first three months last year. Blue crab production (2.4 million pounds) was the greatest, followed by shad (467,000 pounds), and shrimp (268,000 pounds).

NORTH ATLANTIC

Research Marketing Aid Bill Introduced by Maine Solons

A bill which should prove beneficial to Maine's fisheries research and marketing programs was recently introduced into the House of Representatives in Washington, D. C., Commissioner of Sea and Shore Fisheries Ronald W. Green has announced. Green explained that the amendment would provide Federal funds, available on a matching-fund basis, to states interested in expanding their fisheries research and marketing programs.

He said he believes that biological, economic and technological studies undertaken in close correlation with programs of market research and development should do much to revitalize the economy of Maine's fishing industry. "It is my understanding," Commissioner Green concluded, "that the proposed amendment, if enacted, will not curb in any way current programs being conducted by the United States Bureau of Commercial Fisheries."

The bill, an amendment to the Saltonstall-Kennedy Act, was introduced by Congressman Frank Coffin. Cosponsors include the following members of the House Committee on Merchant Marine and Fisheries: James C. Oliver, Maine; T. A. Thompson, La.; George P. Miller, Calif.; Alton Lennon, N. C.; Gerald T. Flynn, Wis.; and Thomas M. Pelly, Wash.

Maine School to Get Minesweeper for Ocean Research Studies

The moth-balled minesweeper *Seagull* is expected to be transferred to the Maine Vocational Training Institute in South Portland in about three weeks, according to U.S. Rep. James C. Oliver. The minesweeper will be used by the school as a floating classroom for marine research, ship handling and fisheries.

Oliver said he expects the deal to be consummated perhaps with payment of \$1 to the Navy. He believes the transfer can be made without time-consuming legislation. The school will agree to return the ship to the Navy in the event of national emergency, and meantime must maintain it in condition satisfactory to the Navy.

The Navy is in process of transferring the vessel to the State for use in MVTI, free of charge, except that the school will pay charges incident to delivery.

New Warren Fishways Termed Successful

The new alewife fishways, built on the west end of the Georges River dam at Warren, Me., have gone into suc-

cessful use. They were built this spring under the direction of Roland Starrett, Warren selectman and alewife commissioner. The pools along its length, at times when the fish are schooling, are full of alewives, seeking fresh water spawning grounds in ponds which empty in the Georges River.

The new fish ladder replaces the one built nearly in the center of the dam in 1937 to permit passage of both alewives and a hoped-for return of a sea salmon run, following stocking of the latter. It was questionable whether many did pass through the old fishways. The alewife run depleted from year to year afterward, and has been a matter of concern for the town and fish surplus contractors since.

Portland Area Boats Overhauled

Story Marine Railway, South Portland, Me., has been active with spring overhauling work. Harris Company's dragger *Vagabond* had her propeller reconditioned, as well as bottom painting, and refastening of rudder and guard iron. The Bath Canning Co. sardine carrier *Ernest Lowell* was in for painting and shoe replacement; her old propeller was reconditioned and her spare wheel put on; her stuffing box was repacked.

Lester Card's 65' dragger *Joyce Marie* of Cape Elizabeth, skippered by Capt. Peter Brichetto, had new oak pads for gallows frames and bollards, and a winch and winch engine were installed. New oak fish sheathing was placed on Capt. Wilbur Olsen's dragger *Dorothy & Ethel* of Cape Elizabeth, which was painted and fitted with new zincs and rudder bolts.

Story put the spare propeller on Capt. Norman H. Olsen's 45' dragger *Challenger*, which was caulked, painted and equipped with new transducer. The bottom of the 50' dragger *Crescent*, Capt. Norman Olsen, was cleaned and painted and new fish sheathing installed; Capt. Paul York's 43' dragger *Vida E. II* was painted throughout. Another complete paint job was done by Story on the 65' gill netter *Anna C.*, Capt. Harry Christensen. New 5-blade Michigan propeller and BJ stern bearing were installed, her stern was recaulked and refastened, and the engine was realigned and bolted down.

Gamage Building Another Dragger

Capt. Sofus Mortensen of Fairhaven, Mass., skipper and co-owner of the dragger *Jacintha* which was rammed and sunk a year ago, is having a 73' vessel built by Harvey F. Gamage, Shipbuilder, South Bristol, Me. Constructed on the same lines as Capt. Magne Risdal's recently completed *Midnight Sun*, the new dragger will be powered by 6-cylinder, 290 hp. D353 Caterpillar Diesel, sold by Perkins Machinery Co. Inc.



Three lobster boats tied up at Benson Lobster Co., So. Portland Me. Forward, boat owned by John W. Morton, II of Scarborough; aft inside, boat owned by Nathan Esposito of Portland; aft outside, boat owned by Joseph S. Esposito of Portland.



Capt. Clifford Trott, skipper, left; and owner Anthony Rose inspecting the new 32-volt Sperry 5 radar aboard their 60' dragger "Phyllis J" at New Bedford, Mass. It was installed by Marine Radio & Electric Co., Inc.

Strikes End at Massachusetts Ports

Some 600 Boston fish cutters who struck at 23 firms returned to work after winning a 35-cent hourly package wage increase. The walkout by the members of the Seafood Workers Union tied up much of the Boston trawler fleet for two weeks.

At the same time, Gloucester's largest fish-processing plant was closed down by a strike of some 300 workers. The workers, members of the Gloucester Seafood Workers Union, set up picket lines around three plants of Gorton's of Gloucester, Inc., seeking a three-year contract calling for a 25-cent an hour pay hike.

A threatened strike of 28 Gloucester Seafood Workers Union members employed by the Consolidated Lobster Co., Bay View, was averted, as men employed by the firm got two pay increases totaling 8 cents an hour this year.

Sets Tuna Catch Record

A record catch of yellowfin tuna for the Northwest Atlantic has been taken midway between Cape Cod and Cape Hatteras, N. C. by the research vessel *Delaware*. The *Delaware*, continuing her tuna explorations in the Gulf Stream, is reported to have caught 90 yellowfin tuna weighing between 75 and 90 pounds each, on one set of 60 baskets with 10 hooks each, recently.

The catch by the *Delaware* is rated 15 fish for each 100 hooks. A member of the Gloucester research laboratory staff said five fish for each 100 hooks is considered very good fishing and the Japanese will fish for even less.

New Equipment for Maine Boats

Capt. Jasper Smith of Chebeague Island, Me. has repowered his 36 x 10'6" lobster boat *Polly-Lin* with an 85 hp. D273 Allis-Chalmers Diesel. Sold by Harbor Supply Oil Co., Portland, the engine is fitted with Capitol hydraulic 2:1 reduction gear and 20 x 18 Columbian propeller, giving the boat a speed of 14 knots.

Sperry 5 radar units have been installed in two Maine sardine carriers. One of the boats is the *Onawa*, owned by Trident Packing Co., Lubec, and skippered by Capt. Raymond Guptill, which was equipped by Wheelden Electric Co. of Stonington. The other boat is the *Eva H.*, owned by Holmes Packing Corp., Portland. Both sets were sold through The Harris Co.

Massachusetts Boosts Fines For Illegal Fishing

Massachusetts Governor Furcolo has signed three bills aimed at increasing penalties for violations of laws governing illegal fishing within the three-mile limit. Two of the bills were filed at the request of Chatham Selectmen and the third at the request of Provincetown officials. A fourth bill, also filed by Chatham Selectmen, increasing the penalty for injuring or damaging fish weirs, was signed by the Governor several weeks ago.

House Bill 2184 increases the penalty for unlawful taking of fish from certain waters of Nantucket Sound from a minimum of \$25 and a maximum of \$50 to a minimum of \$500 and a maximum of \$1,000. The area included within the scope of the bill runs from Monomoy Point on the east and includes all of the waters of Nantucket Sound off the Chatham coast.

In a similar amendment enacted under House Bill 2184, the penalties for taking of fish from certain territorial waters of the Commonwealth also were increased from \$25 and \$50 to \$500 and \$1,000. This covers the area from Monomoy Point on the south to Nauset Light on the north.

The other bill pertains to otter trawling in certain waters adjacent to Provincetown, and increases the penalties from minimum and maximum fines of \$50 and \$100 to a fine of \$1,000. The stipulation that a 30-day imprisonment may be imposed instead of or in addition to the fine was left in the bill.

The measure previously signed by the Governor increased the penalties for injuring fish weirs from \$100 and \$300 to a minimum of \$500 and a maximum of \$1,000. It also provided for a term of imprisonment of not more than two months to be imposed instead of or in addition to the fine.

New Bedford Co-op Buying Catches

The newly established Fish and Scallop Division of the New Bedford (Mass.) Seafood Co-Operative Association began fish and scallop buying operations at Union Wharf, Fairhaven, last month. General sales manager of the organization is Joseph P. Boldiga who was previously connected with Tichon's Fish and Fillet Corp., New Bedford.

Located on the former Mutual Fish Co. dock, the new organization is in the process of constructing additional unloading, packing and storage space, and will be equipped to unload three vessels at the same time.

New Bedford Scallop Landings Still Up

Scallop landings at New Bedford continue to surpass last year's record high figures. Reports show scallop landings in April totaled 1,692,000 pounds compared to 1,563,000 pounds landed during the same month last year. During the month six boats landed 4 trips each.

Landings of the shellfish so far this year stand at 4,981,000 pounds, 727,000 pounds more than were unloaded in the January through April period of 1959. Average scallop price in April was 34½ cents a pound compared with a 38 cents a pound average for March.

Landings of fish during April showed a slight decline over April 1959. Industrial fish landings here were primarily responsible for the drop.

Fluke landings in April totaled 1,196,000 pounds compared with the 384,000 pounds taken out here during the same month in 1959. Through April of this year, 18,821,000 pounds of food fish, scallops and industrial fish have been landed here. Value of the catch is \$3,731,000.

Two New Bedford, Mass. scallopers fishing out of Boston last month brought in two of the largest scallop catches ever to be brought into an East Coast port. The

25-Foot Crab Boat Design for Florida

The accompanying plans are for a crab boat, developed by Alexander W. Vetter, naval architect, of 535 Park Blvd., Millbrae, Calif., to suit the requirements of Leon Conover of Blackwood, N. J., a commercial crab fisherman, for use on the Northwest Gulf Coast of Florida. The owner will build the boat himself.

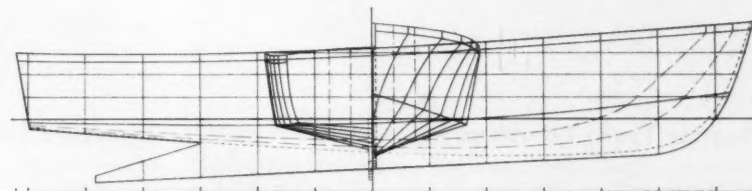
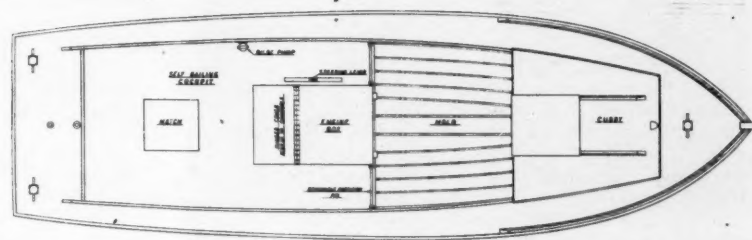
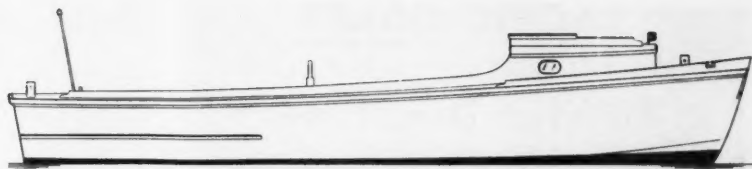
The principal dimensions are 25'9", overall length x 24' at water line x 7'6" x 2'2". Freeboard forward is 3'3"; minimum freeboard is 2'2". Displacement is 4,696 lbs. The power specified is a Willy's Jeep 60 hp., Barr Marine Conversion, and the estimated speed is 13 miles per hour.

The construction specified is 3/4" white cedar carvel planking on white oak sawn frames; the keel is Douglas fir; the keel batten, stem and transom are of white oak. The deck is 3/4" white pine strips laid over 1/4" marine plywood on Douglas fir deck beams.

The boat will be operated in waters 3 to 7 feet deep. The hull has been designed with sufficient deadrise to be comfortable and with ample flare to keep her dry. The keel has been kept long to provide lateral resistance and enable the operator to run his trotline on a steady course. Along with this, the cuddy has been employed in place of a regular house to minimize the area exposed to the wind.

The cuddy has been provided forward so that the crew can seek shelter and the cockpit is self-bailing.

The live crab stows in the hold which is forward and



Outboard profile, deck arrangement and lines of 25' 9" open crab boat designed by Alexander W. Vetter for use in Florida waters.

convenient to the operator to empty his pots or dipper with no wasted motion. The hold will support 500 lbs. Steering is by means of a lever which is on the port side of the operator's hand. The cockpit aft will handle 200 lbs. of gear—bait boxes, tubs, buoys, etc.

With minor modifications this design could undoubtedly fill the needs of fishermen in other types of small boat, inshore operations.

Laura A. reported a 31,000 pound catch and the *Hilda Garston* reported a 33,000 pound catch.

The first deep-sea lobster dragger catch of the year was landed in Fairhaven, Mass. May 27 by the vessel *Shannon*, skippered by O'Neil Lemire of New Bedford. She brought in approximately 4,000 pounds. Several other draggers will join the *Shannon* this month.

Boats Get New Equipment at Fairhaven

A new Model 653 Hathaway winch has been placed aboard the Boston dragger *Rosie C.* at Hathaway Machinery Co., Inc., Fairhaven, Mass. The firm also has installed a Snow-Nabstedt #3764 reduction gear on the *Stonington*, Conn. dragger *Irene and Walter*, and a Snow-Nabstedt #3941 hydraulic gear on the Point Judith, R. I. dragger *Nyanza*.

Two Gloucester Vessels Sink

The 81-foot dragger *Holy Name* which sank eight miles east of Thatcher's Island, while on a groundfishing trip was the second Gloucester, Mass. vessel lost in two days. The *Doris F. Amero* foundered off Cape Cod, 50 miles east of Provincetown. Crewmen of both vessels escaped without reported injury. The *Doris F. Amero* apparently lost her shaft log, while the *Holy Name* struck an unidentified object.

New York Landings Up

Landings of fish and shellfish exclusive of menhaden taken by purse seines, in the marine district of New York during March 1960 totaled 3.9 million pounds valued at \$612,000. This was an increase of 16 percent in volume and 17 percent in value compared with the same month last year. Scup and porgy led with 1.8 million pounds. The catch for the first three months of this year amounted to 11.6 million pounds valued at \$1.9 million for a gain of 23 percent in volume and 12 percent in value.

John Prince Story

John Prince Story, who celebrated his 100th birthday last October, died recently at the home of his son, John W. Story, Newbury. A native of Essex, Mass., he was associated with the shipbuilding industry all his life, and was connected with the James Shipyard and had his own yard.

Axel B. Carlson

Axel B. Carlson, Sr., 79, a partner in Point Pleasant Fisheries and a former vice-president of the Greater Point Pleasant (N.J.) Chamber of Commerce died recently, following a lengthy illness.

In 1940 Mr. Carlson opened the present Point Pleasant Fisheries on Channel drive in Point Pleasant Beach. The firm is now one of the largest fisheries in the state.

PACIFIC COAST

Anti-Pollution Drive Funds Raised by Pacific Oystermen

The Pacific Coast Oyster Growers' Association has allocated \$20,000 to publicize what it terms "the delaying and discriminatory actions by the Washington State Pollution Control Commission, in resolving the pulp-mill pollution problem".

The Association named Edward J. Gruble, Seattle, Wash., as director of publicity. The group charges that "delaying tactics have been detrimental to the economy of the state" and that "sole responsibility rests with the commission in failing to enforce clean-up orders issued in 1956 to pulp-mill operators."

In Olympia some 100 representatives of the oyster and pulp-mill industries attended a State Pollution Control Commission hearing last month on the effects of pulp-mill waste on oysters.

Art Garton, commission director, said the agency will take no action before giving notice to interested parties. The commission heard a report by out-of-state experts recommending maximum amounts of sulphite waste that should be permitted in water over oyster beds.

Seattle Trawl Landings Increase

Seattle, Wash., otter trawl landings in May 1960 showed an increase of 59,000 lbs. over May 1959 for a total of 1,748,000 lbs. The rise mainly was due to jumps in ocean perch up 282,000 lbs. to 327,000 lbs., dover sole up 213,000 lbs. to 438,000 lbs., and English sole up 92,000 lbs. to 157,000 lbs.

Also showing increases were rock sole at 23,000 lbs. up 22,000 lbs., flounder rising 12,000 lbs. to 15,000 lbs., and sable fish which jumped 10,400 lbs. to a 18,000 lb. total.

Washington to Build Two New Hatcheries

Contracts to build two fish hatcheries costing a total of three-quarters of a million dollars were awarded by the State Game Commission on May 24. One is in Grant County and the other on the Cowlitz River at Mossyrock Dam. The former was contracted for \$492,186 and the Grant County PUD, which is building Priest Rapids Dam and Wanapum Dams, has allocated \$455,000 toward the



"Destiny" a 42' salmon-tuna boat has a General Motors 110 hp. engine turning a 5-blade 29 x 16 Federal propeller through 2:1 Twin Disc reduction gear. She is owned by Eino Hill, Grayland, Wash., and is equipped with Sur-Echo depth sounder, Apelco radiotelephone and Northill anchor, and uses RPM Delo lubricating oil.

cost which is expected to reach \$600,000 ultimately. The Mossyrock Hatchery was bid at \$319,887 and the commission said the City of Tacoma which holds a federal license to build the dam, has contributed about \$200,000.

Crab Fleet Move From Wharf Delayed

Crab boat owners met with officials of the San Francisco Port Authority recently about conditions at Fisherman's Wharf, then decided any decision to move the fleet will be postponed pending further meetings. The fishermen, members of the Crab Boat Owners Association, had threatened to berth their boats elsewhere because of lack of truck parking space, debris in the harbor, no electricity or water at the berths and restaurant encroachment.

The session ended as Albert Spadaro, secretary of the fishermen's association, was mollified by reports from Port Director Rae F. Watts and Cyril Magnin, president of the Port Authority.

The reports explained: 1. Three men with a boat are paid \$1600 per month to keep the area cleared of debris. 2. Forty-four new ladders from the street to the water level have been installed and 43 more are coming. 3. Parking of vehicles owned by fishermen on wharf piers is prohibited by the fire department except for short periods. 4. Lack of electricity and fresh water at pier heads will be investigated.

Spadaro said the real problem was that the association had complained about berthing conditions several times in past months but got no action.

Direction Finders for California Boats

Two Southern California purse seiners and the California Fish & Game Commission vessel *Alaska* have just been equipped with Bendix Automatic Visual Direction Finders. The seiners *Sea Scout* and *Pioneer* use the equipment for taking bearings on their spotter aircraft or on other vessels in their fleet. A feature of the ADF is its ability to instantaneously show the bearing of the transmitting station, without the necessity to manually obtain a null.

In the case of the *Alaska*, skippered by Capt. Ivo Kuselj, the Bendix Model 100 AFD is used also to pin-point their position at sea by bearings taken on shoreline beacon or broadcast stations. Three bands are provided: beacon, broadcast and marine, and the relative bearings of the transmitter are visually displayed on the cathode tube.

San Pedro Marine Service Firm Moves

Bolstad Sales & Service, San Pedro, Calif. last month celebrated 7 years in business by moving into new and enlarged headquarters at 401 Centre Street, corner of Fourth Street.

The new facility of more than 10,000 sq. ft. with available expansion space of equal area, comprises general offices, engineering department, service and assembly shop, display floor and five times the warehouse space of the former location. A large, fenced private parking area adjoins the building.

Coincident with the move was the addition of new lines and greater stocks of established Diesel engines. The Bolstad organization has been associated with parts, supplies and service for marine installations, with operations extending to the tip of South America and the Southwest Pacific.

Oregon Tuna Cannery Expands

Spokesmen for Union Fishermen's Cooperative cannery in Astoria, Ore., announced construction has started on an addition to the main building in order to provide space for a second tuna canning line.

The new tuna line, which will be built and installed on the inshore side of the main plant, was expected to be in operation by the first of the month. Meanwhile, company officials stated, salmon canning and other processing will proceed as in the past.

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JUNE, 1960

A fleet of crab boats at Moss Land-
ing, California wait for midnight to
start fishing.



Geneva Deadlock is Victory For Pacific Coast Fishermen

Failure of the 88-nation conference in Geneva on the Law of the Sea is being hailed as a victory for Puget Sound and other Pacific Northwest fishermen. The deadlock in Geneva, which left fishing rights and territorial waters the way they were before the conference began, means that Washington and Oregon fishermen will be able to continue to exercise historic fishing rights and fish off the British Columbia coast outside the three-mile limit.

"The conference ended just the way the fisheries had hoped it would," commented Milo Moore, director of Washington State Fisheries, who represented both Washington and Oregon as an observer at the conference. Moore thinks the question of fishing rights now will be resolved by unilateral and multilateral agreements between the countries themselves. He and other fisheries experts here long have contended that this is the only way fishing rights can be properly settled to the mutual advantage of the nations concerned in any particular fishery.

United States and Canada already have accomplished a great deal in the conservation of halibut, sockeye and pink salmon. This cooperative work has been done through two joint international commissions, one for halibut and one for salmon. Edward W. Allen, acting chairman of Pacific Fisheries Conference thinks the jurisdiction of these commissions could be successfully extended to cover other fisheries over which disputes recently have arisen.

Oregon Group to Fight Dam Construction

Fishermen on the Columbia River will pay ½ cent a pound on fish taken this year to be matched by salmon packers to finance a fight against construction of Nez Perce and Mountain Sheep dams on the Snake River, according to announcement in Astoria by Salmon for All, Inc., a packer-fisherman organization formed to defend the fishing industry.

The notice said John Gilbert, an official of the Columbia River Packers Association representing that group in Alaska, would return to Oregon to help prepare direct testimony to be submitted to the Federal Power Commission.

The FPC will hold a public hearing in Washington, D. C. starting July 18, on applications for licenses for dams at both sites. Direct testimony is to be made available to all participants in the hearing, which is to be limited to cross-examination of witnesses. James H. Cel-

lars, secretary of the packers association, is to represent both packers and fishermen at the hearing.

Salmon for All, Inc., also announced that some of the funds to be raised by voluntary assessment would be used to conduct a defense of the fishing industry against new attempts by some sportsmen to close the Columbia to commercial fishing for steelheads.

Oregon Fishermen Want Self Aid Program

Commercial fishermen from all along the Oregon coast will be asked to vote on the proposal to create a Seafoods Commission of Oregon—a self-help program the same as agricultural commissions.

The petition seeking the referendum stated fishermen need a self-help program for these reasons: "to study and establish orderly, fair, sound, efficient and unhampered marketing, to promote and increase the sale as well as economic stability—and to improve and promote the welfare of those who are dependent on or interested in the commodity."

In their petition, fishermen have asked if the proposal receives a favorable vote, for a commission of seven members, including five fishermen, a processor and a wholesaler. Ex-officio members named in the law would be the state fish commissioner, the state director of agriculture and the dean of the school of agriculture, O.S.C., or their representatives. The petition asked an assessment rate on all fishermen's commercial catch of one cent on each dollar of delivered product.

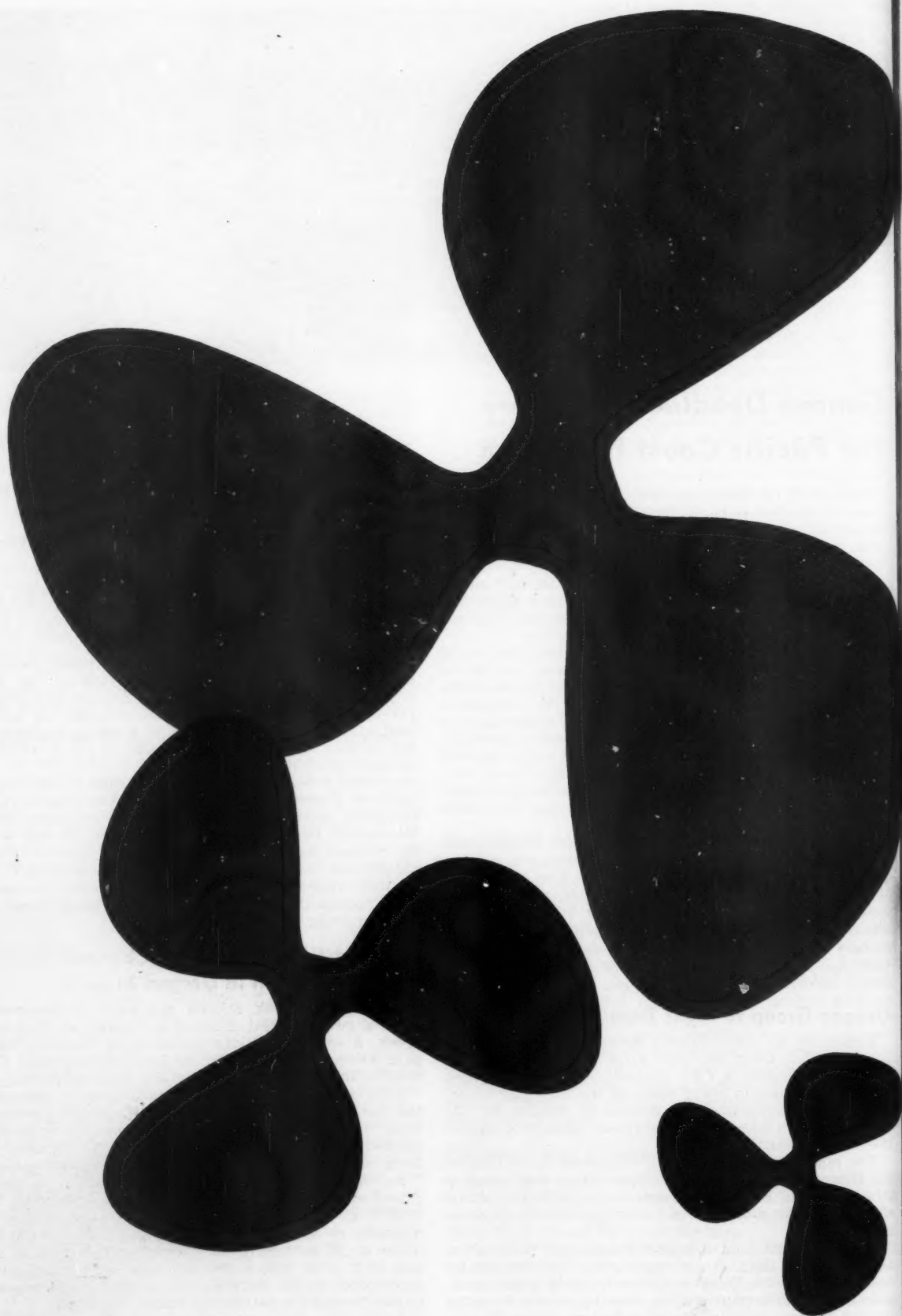
New Artificial Incubation Channel Releases Salmon in Oregon River

Inch-long chinook salmon are heading downstream from a new artificial incubation channel at Abernathy creek, a Columbia River tributary in Cowlitz County near Longview, Wash., the Bureau of Commercial Fisheries of the Fish & Wildlife Service reported recently.

This is the first artificial salmon incubation channel in the lower Columbia river. Last fall, 180,000 eyed eggs from the Abernathy hatchery were planted by hand in eight-inch deep trenches in the gravel. The channel has been designed to incubate as many as 5,000,000 salmon.

At Abernathy creek, fisheries personnel fashioned gravel nests much like mother salmon would make. The 2000-ft. channel was gravel-lined with stones of 2½" in diameter or smaller. The water flow rate is controlled. There are 32 sections in the channel, each 50 to 70 ft. long and 10 ft. wide with a one-foot drop between. A seven-pool ladder at the entrance will permit adults to return to the channel for natural spawning.

As the tiny fish swim up and out of the gravel, and



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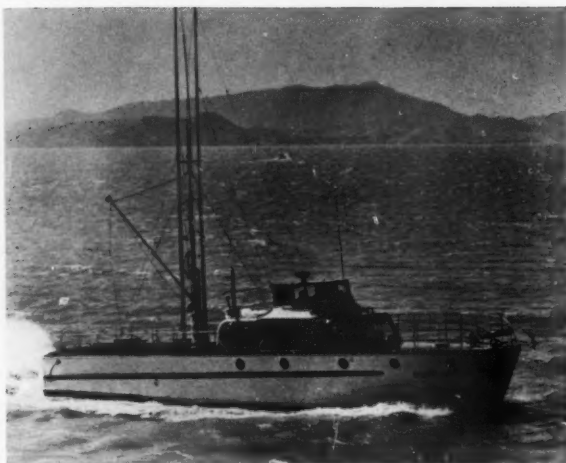


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"Rowland R. Sr." is the 63' salmon and albacore boat owned by William R. Rowland of El Cerrito, Cal., and is powered by two General Motors 225 hp. engines with 1.5:1 Twin Disc reduction gear. Other equipment includes Northill anchor, 100-fathom Sonar, Bendix direction finder. She has a 20-ton sharp freeze hold.

head downstream to the Columbia, they are counted at a trap near the exit of the artificial channel. Initial purpose of the channel is to determine incubation success of salmon eggs planted in an artificially constructed area. Later, when adult fish are permitted to spawn naturally in the channel, the success of such spawning will be measured.

Exploratory Cruise to Determine Effect of Temperature on Albacore Migrations

The California Department of Fish and Game research vessel *N. B. Scofield* departed from Los Angeles Harbor last month on an oceanographic and exploratory fishing venture. The cruise is designed to explore an offshore area of the eastern North Pacific Ocean between Central Baja California, and San Francisco in an attempt to intercept and delineate the migration route of albacore as they approach the west coast.

This cruise is especially important, because the sea surface temperatures in the fishing grounds are reported to have cooled off about two degrees on the average over last year. California biologists are anxious to see what effect this cooling will have on the location of the albacore run. Their opinions are that the cooler surface temperatures may cause the run to occur a little farther south than last year.

Ice Harbor Fish Passage Satisfactory

George M. Radich, Sr., and Ted Bugas of Columbia River Packers Assoc., Astoria, Ore., fish packing firm, recently reported they were favorably impressed with efforts of Army Engineers temporary fish passage installations at the Ice Harbor Dam site. They investigated the Engineers' new bucket device which is currently used to transport chinook salmon over the unfinished dam, and found results thus far "impressive". Radich declared the real test will come when the main run of spring fish arrive at the dam area.

Radich complimented the army engineers for their gentle handling of the fish throughout the whole installation. Few, if any, fish are bruised or otherwise injured in the process, he said. The two men also expressed satisfaction with the engineers' newly created artificial spawning beds at McNary Dam. Engineers have bulldozed a channel at the river's edge and placed gravel and other material on the channel-bottom in order to simulate the natural gravel beds on which salmon spawn.

GULF OF MEXICO

Alabama Oyster Seed, Shell Planting Program Under Way

The initial phase of an expansive oyster development program in Alabama waters, now under way, was scheduled for completion by the first of this month. Officials of the Seafood Division, Alabama Department of Conservation, said 15,000 barrels of seed oysters were to have been planted, weather permitting.

George Allen, chief of the Seafood Division, said the seed oysters were planted in Heron Bay, Portersville Bay and the Dauphin Island area in Mobile County, and later, in Baldwin County waters. The oysters were planted by contractors under Alabama's bid law. Veteran oystermen, Albert and Carl Johnson of Coden, were contractors for the seed-oyster planting. The project was conducted under supervision of the Seafood Division.

A shell-planting project was scheduled to begin at the completion of the seed-oyster program. He said some 60,000 barrels of oyster shells are to be planted in state waters. "The seed-oyster project is a stop-gap measure," Allen said. "They will produce marketable oysters for the next season which opens in September." This should provide oysters, he said, until the planted shells have time to provide oysters.

A practice new to Alabama waters is scheduled for a tryout soon. Heavy rakes will be used to loosen up reefs and bottoms where the shells are packed too tightly with no chance for spawn to catch on them. The raking method has been tried with very good results, Allen stated, off the Texas and Louisiana Coasts in addition to the entire East Coast. Another phase of the development will be an emphasized program of oystermen scattering shells in areas where oysters are tonged. There will also be more emphasis on culling out shells and undersized oysters over the reefs and bottoms where they are tonged, Allen said.

Alabama Boat Burns

The *L. W. Graham*, a 55-ft. trawler owned by Graham Seafood Co. of Bayou La Batre, Ala., burned to the water line off the mouth of the Pascagoula River but the crew escaped injury, after a gasoline-engine generator exploded.

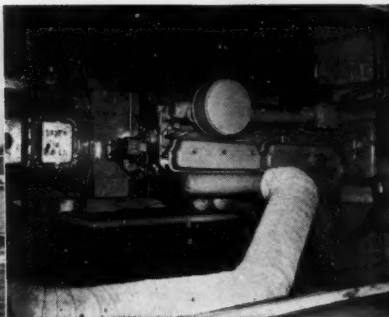
Mississippi Conservation Group Discusses Shrimping, Trammel Nets, Shell Planting

A program to plant from 60,000 to 70,000 barrels of oyster shells will be launched soon by the Mississippi Marine Conservation Commission. The commission expressed hope of planting the shells for about seven cents per barrel.

In other action the commission approved the adoption of Ordinance One, which concerns the method of closing shrimp seasons, restricting shrimping areas and regulating live bait shrimping.

Chairman Simpson also announced that an ordinance "for a temporary solution" will be presented at the next meeting to settle a dispute between the sports fishermen and the trammel net fishermen. A committee had met twice to settle the dispute, but no settlement was reached which would appease both groups. The sportsmen called for a license to fish, a license to sell fish, a closed season be placed on net fishing from April 1 through June 15, and that the money from the licenses be used to employ net fishermen during the closed season until they found suitable employment.

Biologist Demoran said that the problem couldn't be approached from the conservation angle. He pointed out that a closed season would have to apply to both the net and sports fishermen. Commission members discussing



THE PACKAGE . . .

Here is the "Amboy," new pilot boat owned by Amboy Boat Co. of Perth Amboy, New Jersey. It is a passenger launch, welded steel construction, used for boarding pilots, landing crews, in the Port of New York. Specs listed at 38' long by 13½' beam, 6' depth of hull, and 4'1" operating draft.

THE POWER . . .

In the hold of the "Amboy," there is a new Cat D318 Marine Engine. This dependable, economical power plant is rated at 100 h.p. at 1600 r.p.m. with 2:1 reduction gear fitted with a 32 volt starter generator. Propeller is 29" x 18" on a 2" bronze shaft.

THE PEOPLE . . .

Here are the people that put the "Amboy" package in the water. From left to right, Preston Gladding, Gladding-Hearn Shipbuilding Corp., William B. Morrison, Engine Sales Representative of H. O. Penn Machinery Co., and owner, William D. Copeland. H. O. Penn Machinery Co. sold the entire unit including the Caterpillar D318 Marine Engine and handled the engineering with the shipbuilder.

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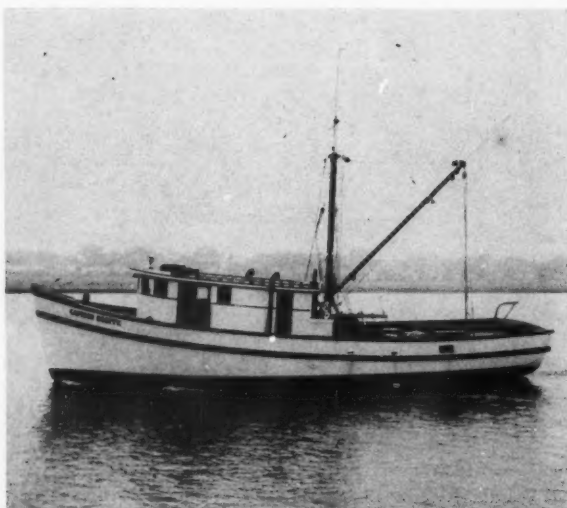
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THE 60' "CAPTAIN SCOTTY", SHRIMPERS owned by W. L. Hardee, Sea Garden Distributors, Inc., Brownsville, Tex. is powered by a 165 hp. General Motors engine with 4.5:1 reduction gear. She has a 46 x 38 Federal propeller, Bendix depth sounder, radiotelephone, and radar, Ritchie compass, Rochester wire rope, and a Stroudsburg hoist.

the problem offered solutions which included closing the Coast to netting during weekends or at night and closing areas in Hancock County.

Hearing Held on Matagorda Closing

A public hearing on the proposal to close Matagorda Bay, Tex., to commercial netting was held at Bay City, Tex. last month according to an announcement by the Texas Game and Fish Commission.

A group of citizens from the Bay City area called upon the Commission to stop netting, charging that commercial netters are depleting the supply of red drum (redfish) and sea trout (speckled trout) in east bay. Opposition insisted the charges were not well founded.

To Reconstruct Mansfield Jetties

Bids have been received by the U. S. Army Corps of Engineers for the reconstruction of the two jetties at Port Mansfield. The estimated cost of replacing the two concrete tetrapod jetties is \$3,000,000. Other repairs and improvements to the project including dredging and channel improvements will follow completion of repairs.

H. L. Sissons, chief local army engineer, said the new jetties will replace the concrete tetrapod structures built about three years ago which proved inadequate in keeping Ports Mansfield Pass open.

Want Shrimp Boat Tax Exemption

A Louisiana business club has asked the state Legislature to exempt shrimp boats from ad valorem taxation. A law authorizing the placement rolls has been on the books since 1932 but has never been enforced.

The Louisiana tax commission now is seeking to collect personal property taxes for boats. Jefferson parish officials attended the meeting and expressed opposition to the commission's efforts to tax the shrimp boats.

Louisiana Approves Use of Car Bodies to Improve Fishing Areas

A resolution providing for necessary steps to place old wrecked cars and other suitable waste materials in Louisiana coastal inland waters to aid the development of the state's fishing industry has received final approval by the Legislature.

The resolution provides that "the Louisiana Wild Life and Fisheries Commission and any agency called upon to

carry out the provisions of this resolution are authorized to expend the necessary funds to comply" with it.

The resolution states that "the placing of old wrecked cars and certain types of other waste materials in the coastal and inland waters of Texas and other states has resulted in a fishermen's paradise".

Gulf Landings Rise

Landings of seafoods at Gulf State ports for the first four and one-half months of 1960 show a substantial gain over that of the same period of the previous year. Heads-off shrimp for 1960 totaled 15.9 million pounds to pass the 12.5 million pounds in 1959. Edible finfish at 3.8 million pounds topped the 3.4 million pounds landed during the same period last year. Blue crabs amounted to 2.8 million pounds opposed to 2.7 million pounds, taken during the first four and one-half months of 1959, and oysters at 475,100 barrels; showed an increase over the 309,500 barrels taken during the same period of the previous year.

Longline Fishing Tested In Gulf and Caribbean

The Oregon, U. S. Fish and Wildlife Service exploratory vessel, spent a month in the Gulf of Mexico and the Caribbean to determine the possibilities of longline fishing and the supply of tuna in that area.

Information was obtained on the migration of blue fin tuna and their spawning habits. Several large pelagic fishes were preserved for laboratory study, and a number of tuna and marlin were tagged and released to aid future studies of growth and distribution.

Twelve yellow fin tuna, one blue marlin and an albacore were taken on thirteen longline sets. But the same number of short exploratory shrimp trawl drags north of Trinidad in 160 to 290 fathoms on rough bottoms were less successful. The best drag only produced 50 pounds of two species.

Buoy to Mark Artificial Texas Reef

The artificial reef built by the Texas Game and Fish Commission will be easier for fishermen to find since the U. S. Coast Guard has approved installation of a buoy marker.

Cost for furnishing and placing the buoy is estimated to exceed \$5,000. Installation should be complete by the first of June. The reef was the first one built off the Texas coast. It consists of some 600 automobile bodies, which are chained together and anchored with concrete. It covers an area of several acres. Water depth at the reef is about 10 fathoms.



"BRENDA K" SHRIMP AND OYSTER BOAT owned by W. L. Strong of Bay St. Louis, Miss., has a Minneapolis-Moline 90 hp. Diesel that turns a 30 x 19 propeller through 2:1 Twin Disc reduction gear. Equipment on the 45' boat includes Southland batteries, Linen Thread netting, Northill anchor, Ritchie compass. She is finished with International paint and uses RPM Delo lubricating oil.

GREAT LAKES

Good Chub Production Reported on Lakes

Both Michigan and Wisconsin commercial chub fishermen were recently getting sizeable takes of chubs from Lake Michigan where spring fishing pressure is currently heavy.

From Lake Superior somewhat better catches of whitefish are being made by trap netters, but the catches aren't up to standard even though yields have improved over last month. Takes of lake trout by gill netters were generally light to better. Some chubs taken from Superior have been noted in western waters, while herring and burbot yields were light.

In the Green Bay area, particularly in the Bays du Noc district, perch and walleye production is under way with catches ranging from light to good depending in weather conditions. Carp, suckers and sheepshead were in good production. Many of the fishermen were taking chubs and perch.

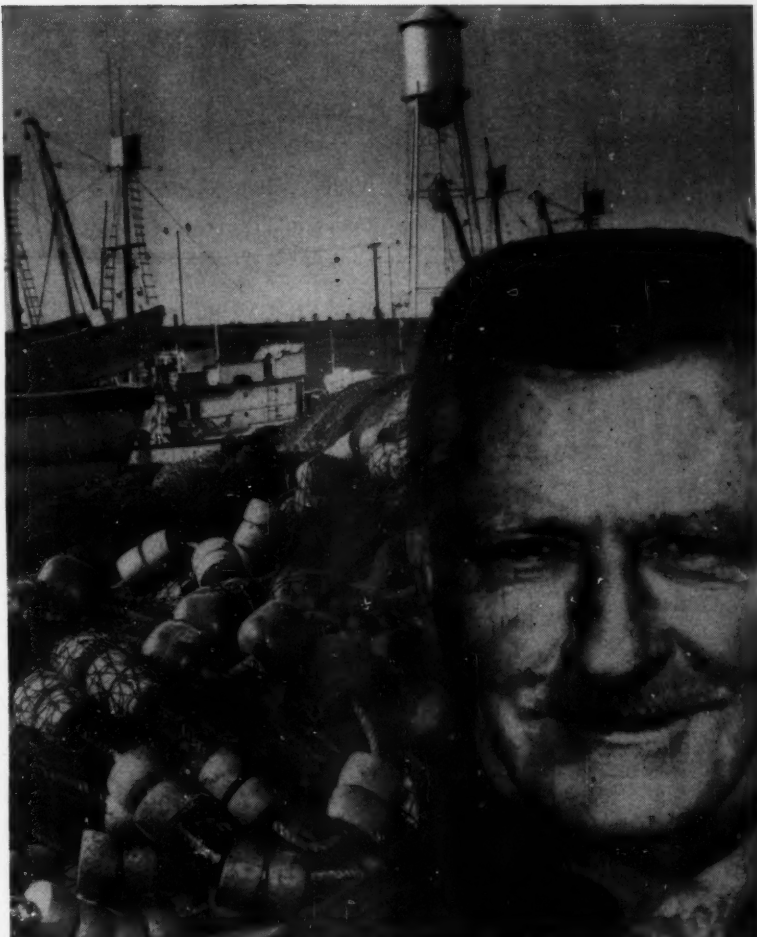
From Lake Michigan where perch, herring and chub production is reportedly fairly good, the biggest hauls have been reportedly in chubs with 30,000 to 40,000 lbs. reaching markets daily. Yellow pike takes were reportedly light, while catches of other fish—mostly in the rough fish class—was reportedly good.

Lake Huron commercial fishermen were getting good takes of chub and perch, bullheads, sheepshead, and light takes of pike. In the northern region of the lake some light catches of whitefish were reportedly made in the 2-pound sizes.

Rough fish catches from Lake St. Clair were generally good as reported by small, established commercial fishermen. Michigan, Ohio, and Pennsylvania commercial fishermen operating on Lake Erie with trap nets were reportedly getting fairly good spring catches. Among these were mostly perch, sheepshead, carp, etc. In the eastern end of the lake New York commercial fishermen were reportedly getting fair catches consistently, but noted no substantial takes of any particular species.

Lake Ontario commercial production was generally fair to better for both American and Canadian netters who fish for the "rough fish" species. Canadian fishermen who fish for whitefish with gill nets often land lake trout which are rather scarce in these waters.

From the Mississippi River and its tributaries commercial production of buffalofish has been very good this spring.



No equal to BFG Spongex floats

... says veteran of 24 years' fishing

"I have been fishing for 24 years now, and from my experience, there is no equal to Spongex floats," says Captain Sam Uskovich of the 97' tuna seiner, "Ronnei M", San Pedro, California.

"We've been using Spongex floats

for the past four years, and replacement has been very small compared to other floats we've used. One Spongex float has the same buoyancy as four ordinary floats, and they don't get waterlogged," said Captain Uskovich.

All these advantages listed by Captain Uskovich—and many others—are what have put B.F. Goodrich floats on regular and newly converted seiners in fishing fleets everywhere. These B.F. Goodrich floats come in 17 sizes, ranging from 3" x 1½" to 6" x 14". For full information, write to The B.F. Goodrich Company, 192 Derby Place, Shelton, Connecticut.

Made under Pat. No. 2,787,568



B.F. Goodrich ring life buoys for fishing boats have all the advantages of Spongex floats. U.S. Coast Guard approved and accepted by commercial lines.

MARINE PRODUCTS BY

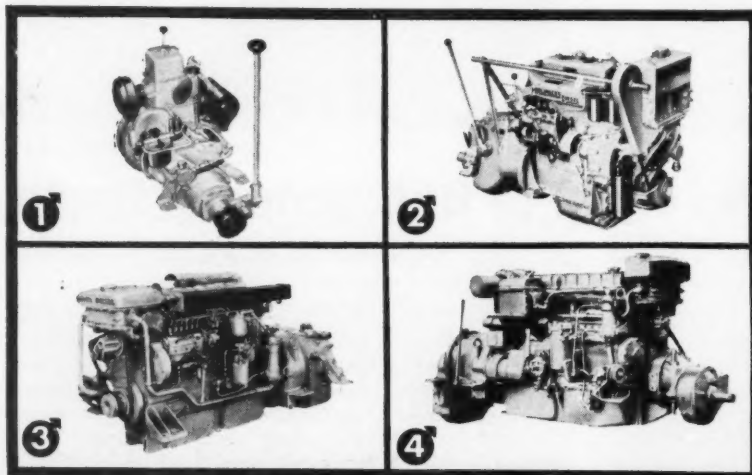
B.F. Goodrich

RUGGED POWER

FROM PACE- SETTING VOLVO MARINE DIESEL ENGINES

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engineered
and built...
for the world's
worst weather*

For over 50 years working fleets have ruthlessly tested these sturdy, superbly-made Volvo Marine Diesels... from the Arctic to the Tropics. Now available coast to coast in 8 stock sizes from 5 to 185 hp., they offer record-holding power for commercial use. **①** MD 1—dependable power for small boats and auxiliaries. **②** 1113BR—a true heavy-duty diesel for the most rugged use in small work or fishing boats. **③** MD47—a light-weight, compact, high-output engine for smaller work and fishing boats. **④** TIMD 96—turbo-charged with inter-cooler for high power with low weight. Dependable choice for heavier work boats and ocean-going fishing boats.



Model	HP	RPM	No. Cyl.	Weight
MD 1	5*	2000	1	300 lbs.
1113 BR	50*	2000	3	1500 lbs.
MD 47	71*	2000	6	1435 lbs.
TIMD 96	185*	1800	6	2205 lbs.

*Continuous rated hp. Direct-injection, 4-cycle diesels.

Write for complete data on entire Volvo line of marine diesel and gasoline engines.

Volvo Import Inc.

452 Hudson Terrace, Englewood Cliffs, N. J.

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CANADA

North Sydney Marine Railway Co., Ltd., North Sydney, Nova Scotia • Northern Engine & Equipment Co., Ltd., Vancouver, B. C.



Trout Restocking Program To Test Survival Rate

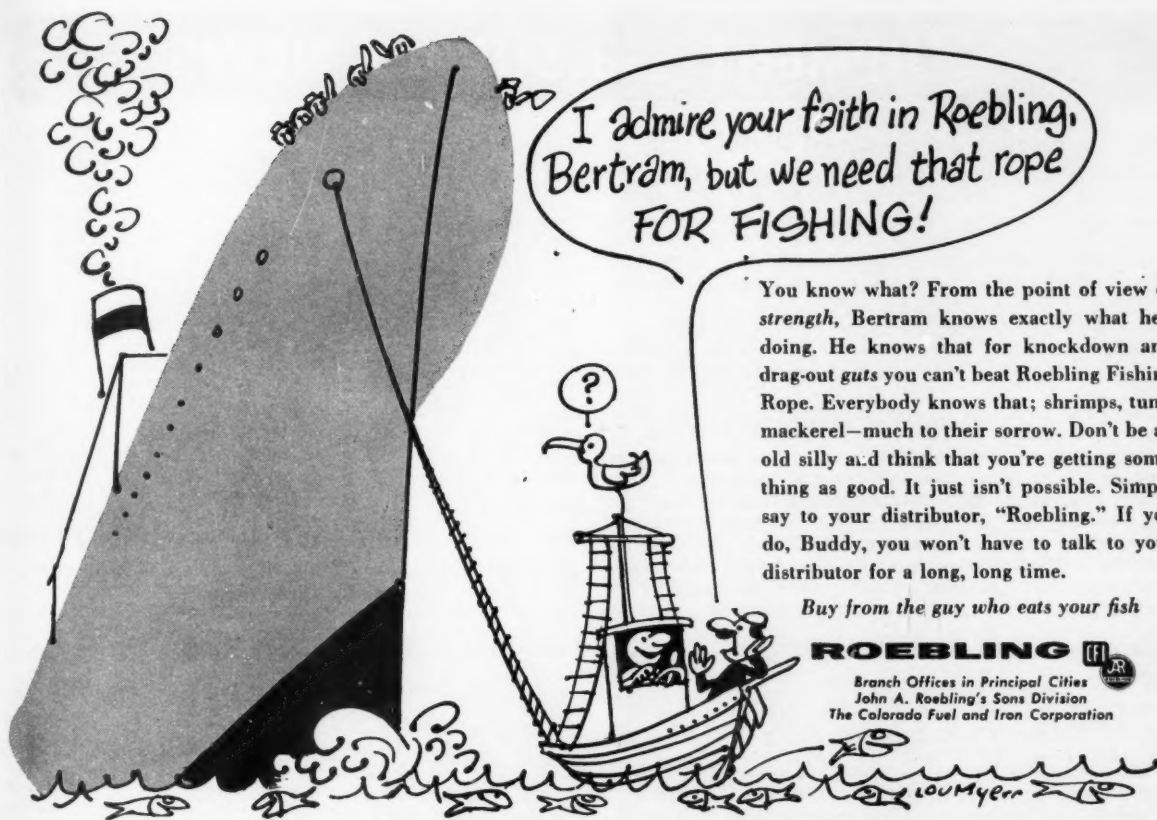
About 92,000 lake trout were placed in Lake Michigan last month so that fishery experts may watch to see how long they can survive. The marked fish (by clipped fins) will be watched to determine: 1. How rapidly hatchery fish disperse throughout Lake Michigan; and 2. How long the young lake trout can live while in waters still under lamprey predation.

Apparently successful chemical attacks on sea lamprey larvae in tributary spawning streams of Lake Superior indicate that the eel-like predator may be controlled within a few years in all of the upper Great Lakes. After the lamprey is controlled, there is an enormous task in restoring lake trout populations in the upper Great Lakes as breeding stocks are low, explains Robert Saalfeld, assistant executive secretary of the Great Lakes Fishery Commission, who is chairman of the special committee on lake trout rehabilitation, supported by Great Lakes states, Ontario, U.S. and Canadian governments. Survival of the yearling trout in Lake Michigan will indicate how long before the lamprey control rehabilitation program can be started, Saalfeld said.

This year will see a record 1,131,000 yearling and fingerling lake trout introduced to U.S. and Canadian waters of Lake Superior. The Ontario Department of Lands and Forests will release 269,000 yearlings near Rossport, 151,000 yearlings in Batchawana Bay vicinity and 50,000 fingerlings in Thunder Bay. The Wisconsin Department of Conservation plans to release 160,000 yearlings and 50,000 fingerlings in the Apostle Islands vicinity. The Bureau of Sport Fish and Wildlife will plant 292,000 yearlings in Keweenaw Bay and another 159,000 off Laughing Fish Point in the Marquette-Munising area.

Barcelona Project to Aid Fishing

Completion of the reconstruction of Barcelona (N.Y.) Harbor is expected to provide a rebirth of the \$1-million-a-year fishing industry here. The project, including erection of two breakwalls and dredging was scheduled to be completed in late June, Ralph H. Gallinger, chief of construction for the Buffalo District, U. S. Army Corps of Engineers, said. The Corps of Engineers supervised work under a \$775,000 contract held by the Al Johnson Construction Co. of Minneapolis. Work began in July, 1958. Development of the harbor is expected to do much towards restoring the Barcelona commercial fishing fleet to its former status.



ROEBLING (CFI)
Branch Offices in Principal Cities
John A. Roebling's Sons Division
The Colorado Fuel and Iron Corporation

Tidal Power Project

(Continued from page 7)

than those in western Maine. Information was also gathered on herring's behavior in currents, on their swimming speeds and depth distribution, and their tolerances to various salinities, temperatures, and pressure changes. This information was then related to the conditions that would prevail after the dams were constructed to determine the actual effect of the impoundments on the fish.

Since any significant changes in oceanographic conditions outside the proposed dams are considered unlikely, sardines should continue to arrive in this area after the dams are built as they did before.

Little change is expected in water velocities in the approaches to the open filling gates. As these velocities will be greater than maximum sustained swimming speed of the sardines, the fish will be swept through the filling gates. The gates will be open only about 6 hours each day; consequently, movement of the fish into Passamaquoddy Bay is expected to be delayed. A similar delay is also anticipated in Cobscook Bay, where the fishes' entry will be chiefly through turbines. Although herring will accumulate more slowly inside the two Bays after the dams are built, there should be no reduction in abundance.

The expected changes in temperatures and salinities resulting from the construction of the dams should not affect the herring except in small isolated areas of high temperatures and low salinities—which the fish can avoid. Sardines can tolerate the expected pressures and rates of pressure change between turbine intakes and exits.

Records of herring landings over a long period show year-to-year variations in the catches for various parts of the Quoddy Region. These catch variations of past years are far greater than any changes in future catches that can be forecast to result from the proposed dams.

The predicted effects of the power dams on the other fisheries of the region are varied. In some instances, benefits should result. The increased water temperatures in

the summer should considerably increase the stocks of scallops, a shellfish of particular importance in Cobscook Bay. A modest increase in lobster production is anticipated. Winter flounder should increase, for anticipated conditions following impoundment will more nearly resemble those to the south where there are important winter flounder fisheries.

It is anticipated that oceanographic conditions will be improved for striped bass, smelt, and tom cod. With suitable fish-passage facilities, an increase in other anadromous fishes, such as Atlantic salmon, alewives, shad, and sea-run trout, should occur.

On the other hand, it is recognized that the dams will be detrimental to some fisheries. The soft clam populations probably will be most severely affected, for the production of this species appears to vary with the size of the intertidal zone. Changed water levels, particularly in the high pool where the present clam beds would be permanently submerged, will reduce the fishery drastically. Clam fisheries will be affected for a period of about 10 years, after which it is expected that they will become re-established at a lower production level than at present. Haddock and pollock fisheries are expected to decrease in the pools, but to make a compensating increase outside the proposed pools. Marine wood borers will probably increase, but estimating how much damage they might do is difficult.

It is predicted that processing plants for sardines, lobsters, and clams will be affected in varying degrees. Two sardine factories in the projected low-pool area will have to be relocated. Changed water levels will prevent boats from reaching their wharves. Increased water temperatures in summer and lower salinities in the high pool will mean that two lobster pounds will have to be abandoned. Also, one lobster plant will have to refrigerate its supply of sea water or extend its suction pipe to greater depths to reach cool water. It is estimated that half of the present clam-processing facilities would not get enough clams for efficient operation.

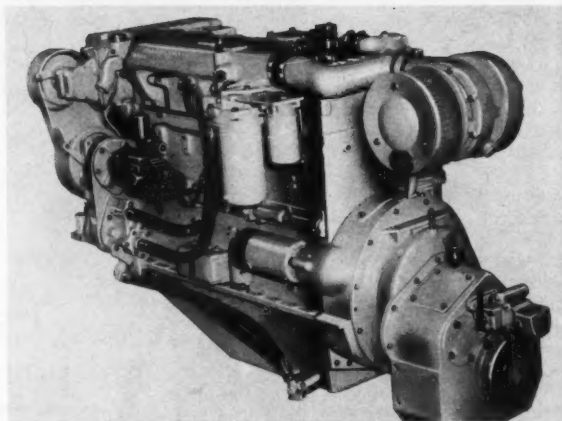
EQUIPMENT and SUPPLY NEWS

New Cummins Turbocharged Diesel

Cummins Engine Co., Inc., Columbus, Ind. has announced a new low profile marine Diesel, the NRT0-6-M, designed for economy of operation and long life. Rated 335 maximum horsepower at 2100 rpm, it is a 6-cylinder turbocharged engine, made for installation in tighter compartments than turbocharged engines previously available in this horsepower.

The NRT0-6-M develops up to 220 hp. at 1800 rpm. for work boats. The bore and stroke are 5½ by 6 inches, total displacement is 743 cu. in and the compression ratio is 14.5 to 1.

The new Diesel is a 4-cycle engine with the cam-actuated Cummins PT fuel system designed to eliminate timing problems. The exhaust is odor free, another advantage of the long wearing 4-cycle operation. Water jackets are available on the turbocharger for the dissipation of heat. Oil bath cleaners, heat exchanger and sea water pump are standard equipment. The engine has removable wet liners for ease and low cost of maintenance. The engine has a weight to horsepower ratio of 9.1 lbs. per horsepower.



Low profile, turbocharged, 6-cylinder Cummins marine Diesel NRT0-6-M develops 220 hp. at 1800 rpm.

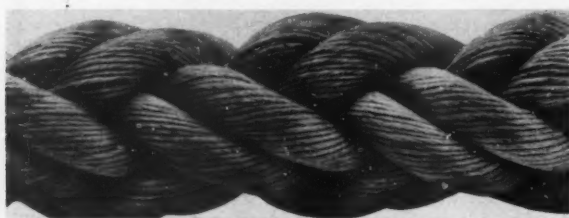
Columbian Anti-Kink Plaited Rope

A new "plaited" manila rope designated as Pli-Moor, with exceptional anti-kink properties and long life, is being introduced in the U. S. by Columbian Rope Co., Auburn, N. Y., on an exclusive basis.

Plaited rope is two or more strands laid parallel then interwoven, the major difference being that the rope can be spliced. Columbian's plaited rope is four sections of two strands which are woven together.

Initially available in 6" to 10" circumference, the plaited rope also will be sold in 120 fathoms of 6", 7", 8" and 9"; and 100 fathoms of 10". It is ideal for mooring and towing.

The rope is claimed to last nearly twice as long as any regular 3 strand Manila rope and to be more flexible than twisted ropes. Due to the characteristics of additional strands which make for additional wearing surface, the resistance to abrasion is increased, while the weight and strength of the new rope is approximately the same as conventional Columbian Tape Marked Manila rope.



New Columbian plaited manila rope, Pli-Moor, made for mooring and towing has good anti-kink properties.

Hughes of Linen Thread Retires

The Linen Thread Co., Inc., announces the retirement of John J. Hughes, who is widely known as a leading authority on fish netting.

Hughes served as Branch Manager of the Baltimore office until 1959 at which time he was appointed Staff Assistant to H. C. Johnson, manager of Linen Thread's Netting Division.

His retirement brings to a close a successful career of almost 50 years with Linen Thread, where he started in a clerical position in New York. He became manager of the Baltimore operation in 1934. Mr. Hughes will continue to serve in an advisory capacity for Linen Thread.

New Kelvin Hughes Close Range Radar

Kelvin & Hughes America Corp., Annapolis, Md. has introduced a new River Type 14/9R U.S. marine radar which is designed to provide high definition at very close ranges, in addition to long range operation. It clearly shows two or more objects which are close together, thus making the unit ideal for navigating in harbors and confined or heavily used waterways.

Basically similar to the Kelvin Hughes Type 14/9 U.S., the River Radar is modified to achieve short-range performance. The modulator uses a very short pulse duration of .06 microseconds for ranges of 30 feet to 3 miles and 0.3 microseconds for ranges of 3 to 48 miles.

Equipment includes a slotted waveguide scanner of advanced design, and a powerful 60 kw. transmitter. Modern circuit design insures sharp focus and a bright picture on all ranges of operation.

For optimum results under conditions of clutter, a differentiating (fast time constant) control, as well as a swept gain control, are provided. The high-definition, 9-inch picture unit is a self-contained assembly, suitable for deckhead, bulkhead, table or pedestal mounting.

Five scale ranges are provided by Type 14/9 Kelvin Hughes Radar: ½ to 3 miles (continuously available) 6, 12, 24 and 48 miles. Accuracy is one percent of indicated range. Maximum power taken from the ship's supply is only 1 kw. with full operation.

Built-in performance monitoring facilities provide a check on transmitted power and receiver sensitivity, in association with "potted" components of the latest type. Individual assemblies in each unit are quickly accessible for inspection and servicing.

New Plant for Diesel Injection Sales

Construction began last month on a modern \$250,000 headquarters plant and office for Diesel Injection Sales and Service, Inc., Norfolk, Va. According to H. E. Wittersheim, president, the new structure is scheduled for completion late this year. It will be fully air-conditioned and will contain 28,000 square feet of floor space, more than 3 times that of the present plant.

Diesel Injection specializes in fuel injection units and allied equipment for the marine field, as well as other industries. It is also supplier for Leslie Hartridge test and repair equipment to the entire Diesel industry in this country. The firm has branch operations at Richmond and Salem, Va., and Charlotte and Raleigh, N. C.

New Crowelon Fil-Core Pot Warp

Crowelon Fil-Core, a new pot warp made with filament Nylon blended with spun Nylon, is being marketed by Andrew Crowe & Sons, Inc., Coventry, R. I. The filament Nylon gives the strength of Nylon rope and the spun Nylon provides a rough surface, making it grip on the winch head and handle better. The spun Nylon also picks up more water, thus preventing the rope from fusing on the winch head and chaffing.

Thoroughly tested and proven in actual use by lobster fishermen, Crowelon Fil-core is said to have about the same strength as polyethylene and is reported to be much stronger than manila.

The new combination filament and spun Nylon pot warp is designed especially for use in lobster, crab and crawfish pot fishing where a strong, rot-proof rope is desired. It is made in cable-laid sizes of 6 thread (1/4" diameter), 9 thread (5/16") and 12 thread (3/8").

The Crowe concern also makes regular Crowelon pot warp, braided Nylon heading twine, filament Nylon rope, braided polyethylene; Nylon stop seines, purse seines, trap and pound nets, and Nylon trawls and cod ends.

Ladd Is Puget Sound Man of Year

Robert D. Ladd, vice-president and general manager of the Pacific Marine Supply Co. has been named as Puget Sound Maritime Man of the Year. He received the honor at the Maritime Press Association's annual Man of the Year banquet in Seattle, Wash. last month.

The Association cited Ladd's outstanding leadership in civic activities of the waterfront. He and his firm have currently and historically been active in furthering the interests of the commercial fishing industry. He has focused the attention of other parts of the community on the Seattle waterfront and its industries by giving freely of his time to many civic organizations.

Ladd is chairman of the Maritime Division of the Seattle Chamber of Commerce and is a member of the Seattle Mayor's Maritime Advisory Committee. He has contributed greatly to the re-vamping and improvement of the vital Seattle Harbor Patrol as an active member of the Harbor Patrol Committee. He is a member of the Board of Trustees and is two-time president of Northwest Marine Industries, Inc.

Spray Products Introduces Diesel Pep

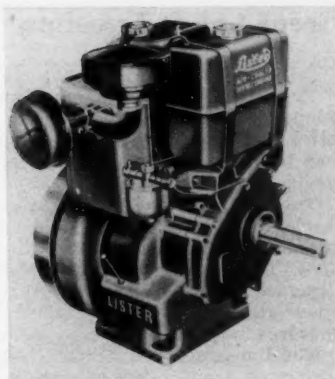
Spray Products Corp., Camden 1, N. J. announces the addition of a new product named "Diesel Pep" as a companion item for Spray Starting Fluid. Diesel Pep is a combination of solvents, dispersants, oils, and other ingredients formulated to improve the performance of all type Diesel engines.

When used according to directions, Diesel Pep will keep injectors, screens, filters and fuel pumps clean, improve combustion, disperse water and keep fuel lines open. It will also prevent rust and acid formations, remove gum and varnish, reduce engine wear, eliminate wax, sludge and other harmful deposits and minimize smoking.

Diesel Pep is used by adding the required quantity to the fuel tank at any temperature and then operating the engine in the regular way. This is recommended by the manufacturer for regular maintenance. Where the engine is extremely sluggish and power loss is evident, double the usual quantity is recommended for initial treatment. Diesel Pep contains no ingredients that would be harmful to an engine, and regular use of Diesel Pep is said to assure more efficient and economical operation of any type Diesel.



Lister-Blackstone has introduced two new air-cooled Diesel engines, the SL1 and the SL2.



New Lister-Blackstone Outlets

Lister-Blackstone, Inc., 42-32 21st St., Long Island City 1, N. Y. announce the appointment of the several distributors and dealers to handle their Diesel engines. New distributors include Shelley Tractor & Equipment Co., 7675 N. W. 12th St., Palmetto Bypass, Miami, Fla., and Andrews & Andrews Equipment Co., Ft. of S. W. Gibbs St., Portland, Ore. New dealers include Atlanta Equipment Co., Box 6243, Station H., Atlanta, Ga.; Michigan Generator Service, 13040 W. Chicago St., Detroit, Mich.; and Engines, Inc., 2847 No. Pulaski Rd., Chicago, Ill. With these additions, Lister sales and service facilities are now available throughout the entire United States.

Lister-Blackstone has announced the introduction of their air-cooled Diesel engine Models SL1 and SL2. The Model SL1 is now rated 4.75 bhp. at 2000 rpm., and the Model SL2 rated 9.5 bhp. at 2000 rpm.

Griffith Rubber Trolling Snubber

Griffith Rubber Mills, 2439 N. W. 22nd Ave., Portland 10, Ore. is offering a trolling snubber with an improved Kolstrand double snap designed to be quickly and simply worked—even when gloves are worn. It enables the fisherman to remove the leader with the hooked fish and snap on a rigged and baited leader in a matter of seconds.

Griffith trolling snubbers are made from a live rubber compound that resists salt spray, oil and sunlight. They are claimed to be highly resilient and extremely durable. The most popular Griffith model has a rubber section 14" long with swivel on one end and the new improved Kolstrand double snap on the other. The swivel comes as regular type or with ball bearing.

The "give" in the special marine rubber actually sets the hook in the same manner as an experienced fisherman with a pole. After a strike, the rubber gives, letting the fish run slightly, then snaps back, setting the hook firmly.

Osco Dealers in California, New Jersey

The Breakwater Yacht Brokerage Co. of Santa Barbara, Calif., and the Crystaliner Marine Way of Morro Bay, Calif. have been appointed dealers for the complete line of Osco Ford Diesel and gas engines by Osco Motors Corp., 3627 N. Lawrence St., Philadelphia 40, Pa.

These dealers will sell, install and service Osco engines from their yards. This is another step in Osco's expansion program planned to bring Osco engines to commercial fishermen and boat yards throughout the U. S.

Osco Motors has also announced the appointment of Dorchester Engineering Corp., Dorchester, N. J. as its exclusive distributor for the South Jersey, Delaware and Maryland territory.

Fellows & Stewart, Inc., Berth 213, Terminal Island, San Pedro, Calif., and their dealers are using trailers to take Osco Ford Diesel and gas engines directly to the customer for demonstration purposes. Other Osco dealers will have trailers to display their products in the near future.

Great Lakes Trawling

(Continued from page 9)

There has been some experimental fishing for smelt conducted with modified trap and pound nets, gill nets, attraction devices, and small trawls; but little success had been realized in U. S. waters in application of these devices, or in changing the seasonal aspects of the fishery.

The U. S. Bureau of Commercial Fisheries, in cooperation with the Ohio Division of Wildlife, began an exploratory fishing program in Lake Erie in September 1958. The current program, resulting, is the first study designed to determine the seasonal distribution of the smelt resource and the commercial availability of this resource to trawl gear.

The Bureau of Commercial Fisheries is utilizing the 50' converted trap-netter, *Active* in its research activities. The trawls used by the *Active* are similar to those used in the industrial fishery of the Gulf of Mexico, Gordon explained. Trawls, 50 to 55 ft. at the headrope, constructed of 2¼-inch stretched cotton mesh and 1½-inch cod end mesh were used for most of the work. They were attached to 2½- by 6-ft. bracket-type trawl doors with 10-fathom bristles. Only minor rigging changes were necessary to meet varied fishing conditions. The amount of warp (scope) used in relation to water depth varied from 3:1 at the greater depths, to 5:1 at lesser depths.

Trawl fishing results, to date, indicate that bottom types in Lake Erie vary little from area to area, and generally consist of sand and rock inside five fathoms, with clay, or soft mud extending from this depth to the deepest water. Boulder and rock outcrops are frequent only in the western portion of the lake; and only a few boulder-and trash-strewn areas occur within the central and eastern portions. These latter constitute trawling hazards; but, for the most part, the entire lake is trawlable.

Sea and weather conditions, during the period June through September 1959, were favorable for trawling operations, Gordon's report continued. The period of worst weather usually extends from November through April when strong winds and ice formations often make trawling hazardous. Good harbors are within a few hour's cruising time from the fishing grounds in Lake Erie.

Commercial quantities of smelt were taken throughout much of the central and eastern portion with optimum catches obtained between the 8- and 12-fathom depth curves. During the early summer, best catches were made at depths of 8 to 10 fathoms between Vermilion and Ash-tabula, Ohio. In general, catches there averaged less than 500 pounds per one-hour drag. The area of greatest concentration as found in this investigation, was off the Pennsylvania-Ohio line within the 11- to 12-fathom depth curves where, for example, one day's operation in early October produced 7 tons of marketable smelt (8 to 20 per pound) in four hour's fishing time, and a simulated commercial fishing attempt produced over 40,000 pounds in 6 days of operation. This indicates that trawling for smelt has commercial possibilities.

Other areas which afforded good commercial indications were found off Erie, Penn. and Barcelona and Dunkirk, N. Y., at the 10-fathom curve. Almost all catches made in these areas during late September consisted of large to medium smelt (10 to 25 count). Gordon stated Catch rates with the trawl averaged about 200 pounds of smelt per drag.

Limited quantities of other fish species were taken in most drags made inside 6 fathoms. Yellow perch, white bass, sheepshead, and several varieties of minnows were caught in drags completed in the shallow waters. Burbot and an occasional herring were sometimes taken with smelt in drags completed in deeper water. The striking fact is, however, that of the total catches made by the *Active* during 1959, smelt comprised over 97 percent.

Preliminary examination of the data from explorations made to date indicates that marketable smelt are distributed seasonally over much of the central and eastern portions of Lake Erie. Fishable concentrations show a

seasonal movement eastward from the central portion of the lake which continues until early fall. This movement appears closely related to water temperature. In the U. S. waters of western Lake Erie, explorations did not reveal any commercial concentrations of smelt. Gordon's report concluded by stating that additional exploration will be required before highest production techniques and areas can be established.

Potential Dogfish Market

(Continued from page 11)

The company's venture is privately financed and must therefore proceed cautiously, McCarthy said. "We do not seek financial assistance from either the federal or state governments, but we also don't want to compete with them."

Canned Dogfish Well Received

He reported that the company had received highly favorable reaction, without exception, from the many persons engaged in food processing who had tested their dogfish shark product, which they hope to market under the name "flakefish" or "Pacific Ocean Flake".

The confidence that an important new industry will be started, or an existing one greatly expanded, in the Pacific Northwest, Alaska, and part of New England and Canada was expressed further by McCarthy, as he told of the progress made by his firm in developing machinery required to apply "mass production" techniques to the newly patented canning process.

The company asserts that the dogfish canning process applies equally well in canning halibut, cod, sole, pollock, rockfish, ocean perch and many other species of food fish not now canned successfully by any other method.

The Harbor Island Machine Works of Seattle has been chosen to construct, install and test the prototype machine because of their extensive experience and overall knowledge of cannery operation and equipment, McCarthy said.

Paul L. DeFaccio, president of the machinery company, stated that his organization was amazed at the fine quality and taste of products obtained through use of the new process and was enthusiastic about the prospects of the entire project. The equipment is expected to be installed and operating by late summer of this year.

McCarthy believes that the machine will be the first of hundreds which will be in use within the next 2 to 5 years. The company intends to lease the machines and license their use on a royalty payment basis.

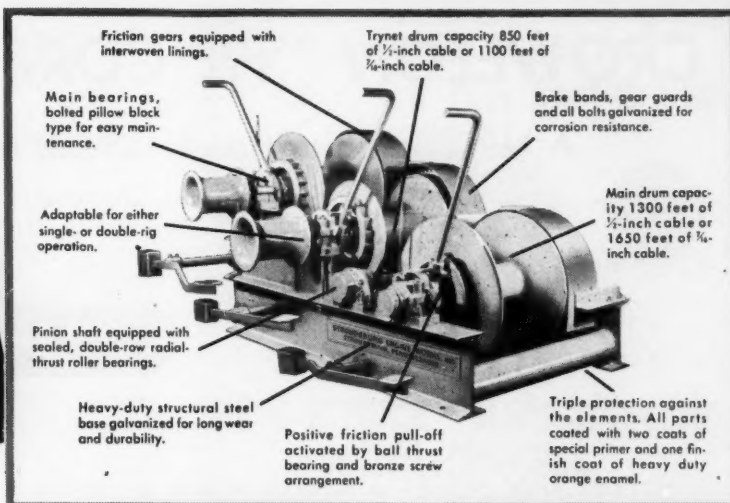
McCarthy's contention that a new or expanded fish canning industry might result from the process is based on the fact that of the scores of different species of edible fish landed in this country and elsewhere, very few are available to the consumer in cans.

Of those, salmon and tuna fish predominate and are relatively high priced. His firm feels that there is a large segment of the available market which can be drawn to fish products made available through use of the new canning process, both due to the quality obtained and because of the competitive pricing that the company believes can be maintained.

The firm also contends that the seasonal lapses in the operation of existing salmon canneries could be sharply reduced if they were equipped to can other species that are either landed after the salmon canning season closes or have been held in cold storage from earlier periods of abundance.

While the company has packed most species of bottom-fish in the experimental cannery in Seattle, they are most enthusiastic over the results they have obtained canning dogfish shark. "We are more convinced than ever that there are millions of dollars worth of fish being completely unexploited, with vast quantities of it located in Puget Sound and the outside waters of Washington and British Columbia," McCarthy declared.

NOW STROUDSBURG SERIES 516T TRIPLE DRUM HOISTS



Built with the same tradition of fine craftsmanship that has made Stroudsburg Hoists first choice of the fleet, the new Series 516 T hoists are the latest addition to this great line. These hoists are the result of several years of development by Stroudsburg's research engineers and are the finest available for today's fishing boats.

When you buy a new vessel or refit your present one, make sure with a Stroudsburg Hoist. Stroudsburg makes the most complete line of hoists available anywhere for both single- and double-rigged service.

For detailed information on Series 516 T and the complete line of Stroudsburg Hoists, write today for your copy of the full line leaflet.

STROUDSBURG ENGINE WORKS, INC.
STROUDSBURG, PENNSYLVANIA

SERVING INDUSTRY
SINCE 1903

New Florida Scallop Bed Maybe World's Largest

Discovery of a vast new bed of scallops along the Florida coast—possibly the largest bed in the world—has been reported by the U.S. Fish & Wildlife Service. Fishermen and conservation officials said it could mean a boom to the Florida fishing industry.

The bed was discovered and tentatively outlined by the Service's exploratory vessel during a cruise last month, according to Harvey Bullis, director of Gulf fishery exploration for the Service in Pascagoula, Miss.

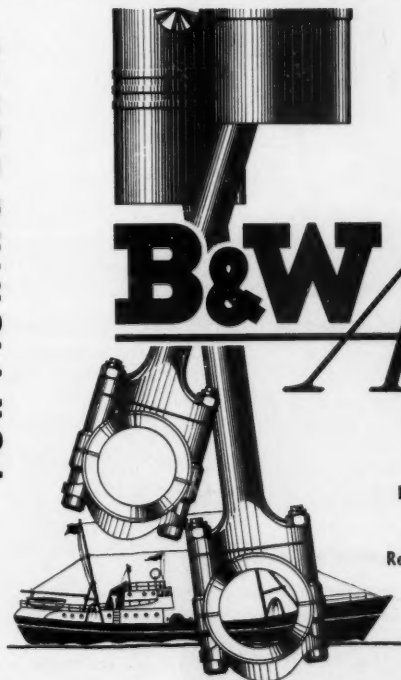
Bullis stated the bed occupies an area apparently more extensive than any previous known scallop beds in the world. He added the latest voyage produced evidence that the bed extends from off Daytona Beach to Fort Pierce, between the 90 ft. and 150 ft. contours, or roughly 30 to 40 miles off shore.

Commercial concentrations of scallops were found over a 1,200 square mile area, with indications that the bed may be even more extensive. Catches during exploratory cruises ranged from one to ten bushels per half hour drag with an 8 to 10 ft. scallop dredge.

Bullis stated several large areas of the bed yielded catches in excess of 20 bushels per drag. The scallops

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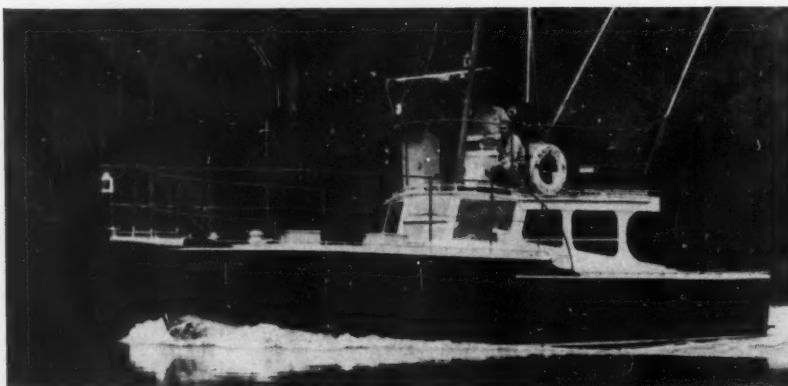


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**[as much as 100 miles offshore]*

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CAPTAIN ART BERRY, Baton Rouge, La., owner and builder of the 40-ft. charter boat "Nautilus."

averaged about 2½ inches in diameter and yielded five pints of meat per bushel. Twelve consecutive half hour drags with a single dredge through the middle of the bed produced 132 bushels of scallops.

Some fishermen do not see any immediate switch over of shrimp boats for a try at scalloping, because they feel it will take time to convert boats and the rig is expensive. However, the announcement of the discovery could bring in scalloping boats from other beds.

William Feger, operator of a seafood business in New Smyrna Beach said the area can expect New Jersey boats to take advantage of it. Scallops are readily marketable at good prices, he said. Feger speculated it would take at least a 60 ft. boat to accommodate a heavy dredge and normal catch.

The U. S. Fish & Wildlife Service announced it would continue its exploration of the 1,200 square mile bed. Bullis said because of the interest shown by the fishing industry, the motor vessel *Silver Bay* returned to the Cape Canaveral area for another exploratory cruise and gear trials.

The *Silver Bay*, based at Brunswick, Ga. is making daily trips to the bed to demonstrate use of commercial scalloping equipment. Bullis said representatives of fishing interests are permitted to make the trips as observers.

BOAT CATCHES

For Month of May

Hailing fares. Figure after name indicates number of trips.

GLOUCESTER (Mass.)

Admiral (1)	68,000	Magnolia (2)	360,000
Agatha (1)	50,000	Malolo (3)	203,000
Agatha & Patricia (2)	115,000	Manuel F. Roderick (1)	54,000
American Eagle (4)	138,000	Manuel P. Domingoes (2)	315,000
Anthony & Josephine (1)	42,000	Marianna II (2)	67,000
Ave Maria (1)	9,000	Mary & Joan (1)	82,000
Baby Rose (1)	7,000	Mary Ann (5)	361,500
Blue Waters (2)	310,000	Mary Jane (1)	200,000
Bonaventure (1)	30,000	Mary Rose (3)	383,000
Bonnie (1)	128,000	Morning Star (6)	211,500
Buzz & Billy (2)	79,500	Nancy & Maria (1)	11,000
Carlo & Vince (3)	44,500	Natale III (6)	385,500
Carmela Maria (1)	15,000	New Star (2)	222,000
Charlotte M. (1)	40,000	Notre Dame (1)	22,000
Cigar Joe (3)	96,000	Ocean Wave (3)	295,000
Columbia (1)	30,000	Ohio (1)	72,000
Curlew (3)	495,000	Olympia (5)	255,500
Dolphin (2)	240,000	Our Lady of Fatima (2)	390,000
Doris F. Amero (3)	147,000	Phantom (1)	111,000
Eagle (2)	70,000	Phillip & Grace (2)	162,000
Edith L. Boudreau (3)	300,000	Pilgrim (1)	80,000
Emily H. Brown (2)	163,000	P. K. Hunt (2)	200,000
Estrela (1)	210,000	Puritan (2)	85,000
Ethelena (1)	37,000	Regina Maria (2)	72,000
Evelyn L. Brown (1)	210,000	Rhode Island (6)	352,000
Flow (2)	495,000	Rosalie S. (3)	128,000
Frances R. (4)	83,500	Rose & Lucy (5)	217,000
Gaetano S. (2)	157,000	Rosemarie (6)	265,000
Golden Dawn (3)	166,000	Rosie & Gracie (5)	171,500
Golden Eagle (1)	135,000	St. Anna Maria (3)	85,000
Grace & Salvatore (2)	130,000	St. Cabrini (5)	232,000
Hazel B. (2)	83,000	St. Joseph (5)	229,500
Holy Family (2)	270,000	St. Mary (7)	205,000
Holy Name (2)	6,500	St. Nicholas (2)	350,000
Ida & Joseph (6)	394,500	St. Peter (8)	368,000
Immaculate Conception (6)	303,500	St. Peter III (5)	281,500
Irma Virginia (2)	19,000	St. Rosalie (5)	263,000
Jackie B. (1)	21,000	St. Terese (5)	274,500
J. B. Junior (1)	180,000	St. Victoria (1)	40,000
J.B.N. (3)	135,000	Salvatore & Grace (5)	222,000
Jeanne D'Arc (2)	155,000	Sandra & Jean (3)	102,000
Jennie & Lucia (5)	206,000	Santa Maria (2)	172,000
Joseph & Lucia (2)	320,000	Sea Queen (2)	100,000
Joseph S. Mattos (2)	390,000	Sebastiana C. (5)	323,500
Judith Lee Rose (2)	610,000	Serafina N. (5)	201,000
Kingfisher (3)	620,000	Serafina II (5)	210,500
Lady of Good Voyage (1)	100,000	Sunlight (2)	325,000
Lady of the Rosary (3)	142,000	Terra Nova (1)	100,000
Leonard & Nancy (1)	17,000	Texas (1)	97,000
Little Flower (7)	247,500	Theresa M. Boudreau (2)	400,000
		Villanova (2)	445,000
		Vincie N. (6)	468,000
		Virginia Ann (5)	44,000
		Weymouth (1)	85,000
		Wild Duck (2)	300,000

ROCKLAND (Me.)

Angie & Florence (4)	252,000	Louise G. (4)	124,000
Araho (3)	330,000	Mabel Susan (5)	178,000
Brighton (2)	400,000	Ocean (2)	570,000
Elin B. (3)	160,000	Squall (2)	350,000
Ethel B. (2)	7,000	Storm (1)	260,000
Flo (4)	224,000	Surf (2)	560,000
Helen Mae II (3)	171,000	Tide (2)	550,000
John J. Nagle (1)	140,000	Vandal (1)	90,000
Little Growler (4)	253,000	Wave (2)	580,000

Scallop Landings (Lbs.)

Pocahontas (2)	22,000
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WOODS HOLE (Mass.)

Arnold (2)	10,800	Jeabar (4)	3,300
Bernice (3)	23,100	Madeline (4)	35,500
Cap'n Bill III (2)	44,800	Madonna di Siracusa (1)	2,700
Carib (1)	2,100	Medric (2)	2,100
Dauntless (2)	39,100	Mildred W. (1)	1,200
Dorothy & Mary (2)	48,400	Minkette (2)	23,700
Driftwood (3)	5,200	Morning Star (6)	10,300
Franora (3)	20,800	Reliance (1)	1,700
Gertrude D. (2)	18,500	Terra Nova (1)	500
Isabelle J. (1)	7,100	Trina Lea (2)	5,200
Janet Ellise (1)	3,000	Viking (3)	5,700

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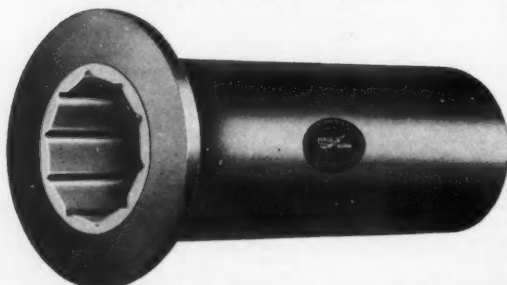
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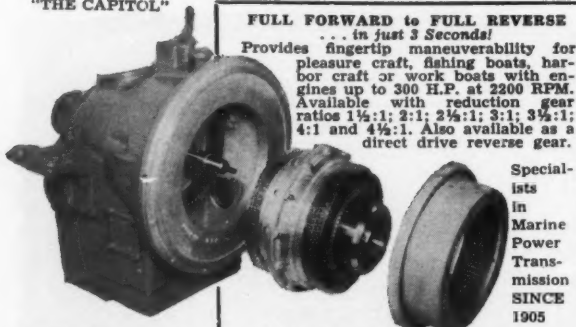
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BOSTON (Mass.)

Agatha (1)	33,700	Mother Frances (2)	90,800
Annie & Lucy (2)	14,100	New Star (1)	90,000
Arlington (2)	211,300	Notre Dame (2)	64,300
Atlantic (2)	139,000	Ohio (1)	112,000
Baby Rose (2)	154,200	Olympia La Rosa (2)	56,100
Bonaventure (1)	71,200	Pam Ann (1)	61,800
Bonnie (1)	107,500	Patty Jean (2)	262,000
Buzz & Billy (1)	36,400	Phantom (1)	140,000
Cambridge (2)	129,000	Pilgrim (1)	64,000
Caracara (1)	54,500	Plymouth (1)	47,500
Carmela Maria (1)	8,500	Puritan (1)	43,000
Carman & Vince (1)	32,100	Racer (2)	174,100
Charlotte M. (1)	41,700	Red Jacket (2)	256,700
Clipper (2)	83,600	Rosa B. (2)	197,000
Comet (1)	144,200	Rosie (2)	44,000
Ethelena (1)	30,100	St. Angelo (2)	57,300
Flying Cloud (3)	500,700	St. Marco (2)	84,900
Four (1)	80,000	Salvatore (3)	2,600
Glenn (1)	60,500	San Calogero (1)	13,300
Grace & Salvatore (1)	78,700	Texas (2)	108,400
Heroic (1)	79,500	Thomas D. (1)	30,200
Jenne D'Arc (1)	78,100	Thomas Whalen (2)	134,500
Leonard & Nancy (1)	44,600	Villanova (2)	36,400
Little Chuck (1)	14,900	Weymouth (2)	155,700
Magellan (2)	80,800	Wm. J. O'Brien (2)	250,000
Manuel F. Roderick (2)	109,600	Winchester (1)	86,400
Margaret & Rose (1)	41,200	Wisconsin (1)	152,500
Mary & Joan (1)	69,900	Yankee (1)	6,700
Minnie (2)	256,500		

Scallop Landings (Lbs.)

Florence & Lee (2)	24,400	Laura A. (3)	40,400
Hilda Garston (2)	25,400		

PORTLAND (Me.)

Alice M. Doughty II (2)	78,000	Mascot (3)	3,300
Ariel (9)	17,300	Median (1)	300,000
Bobby & Jack (2)	169,000	Ocean Life (2)	560,000
Bois Eubert (1)	12,000	Quincy (2)	390,000
Courier (1)	175,000	Resolute (1)	40,000
Dorchester (2)	400,000	St. George (2)	440,000
Dorothy & Ethel II (1)	8,000	Sea Hawk (1)	50,000
Elinor & Jean (3)	94,000	Surfman (3)	2,400
Frances R. (1)	40,000	Susan Ann (1)	2,500
Gulf Stream (2)	350,000	Susan L. (1)	400
Helen S. (6)	17,600	Theresa R. (2)	253,000
Kennebec (1)	50,000	Vandal (2)	187,000
Lady of the Rosary (1)	5,000	Vida E. II (13)	20,400
Lawrence Scola (2)	5,400	Voyager (3)	93,000
Lawson (1)	60,000	Wawenock (3)	750,000
Maris Stella (1)	190,000	Winthrop (2)	400,000
Mary & Helen (9)	14,800		
Mary & Jennie (8)	13,400		

Scallop Landings (Lbs.)

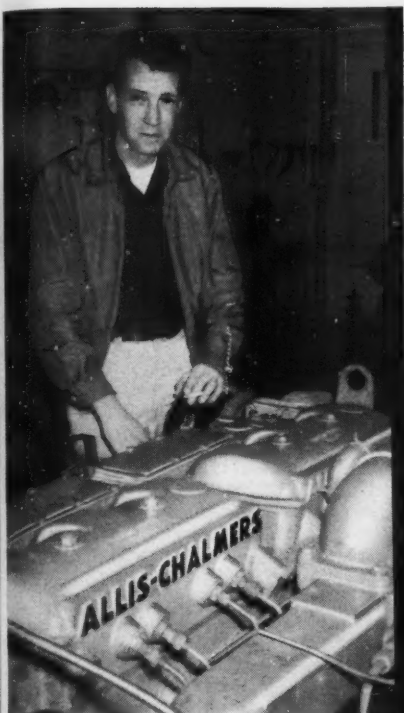
Abram H. (2)	27,000	Rita B. (1)	15,000
Francis L. MacPherson (2)	24,000	Sylvester F. Whalen (2)	26,500

NEW BEDFORD (Mass.)

Scallop Landings (Lbs.)

Aloha (3)	34,600	Linda & Warren (1)	7,300
Alps (2)	22,200	Linus S. Eldridge (1)	11,200
Amelia (2)	22,400	Lubenray (3)	33,600
Babe Sears (2)	22,400	Malene & Marie (3)	37,800
Baltic (3)	33,600	Mary Ann (3)	33,600
Barbara & Gail (4)	44,900	Mary J. Hayes (3)	34,600
Bright Star (3)	36,600	Midnight Sun (3)	36,000
Camden (3)	33,600	Nancy Jane (3)	33,600
Carol & Estelle (3)	34,600	Neptune (4)	48,800
Catherine B. (3)	34,600	New Bedford (3)	36,900
Catherine C. (3)	34,200	Newfoundland (4)	47,200
Charles S. Ashley (3)	37,400	Noreen (3)	36,000
Clipper (3)	35,600	Pelican (4)	48,800
Dartmouth (3)	35,600	Porpoise (3)	34,600
Debbie & Jo-Ann (3)	35,600	Prowler (4)	49,400
Edgartown (3)	37,800	Richard Lance (2)	22,400
Fairhaven (4)	48,800	Ruth Lea (4)	44,800
Fleming (3)	37,400	Ruth Moses (4)	48,800
Fleetwing (3)	36,600	Sandra Jane (3)	36,600
Florence B. (3)	37,300	Sippican (4)	41,600
Geraldine (3)	39,600	Snoopy (2)	23,400
Ike & Jens (4)	49,200	Stanley B. Butler (3)	36,600
Jerry & Jimmy (1)	7,500	Stanley M. Fisher (4)	42,500
John Michael X (2)	22,400	Sunapee (2)	24,400
Josephine & Mary (2)	22,800	Tocsin (4)	45,300
Kingfisher (3)	35,600	Ursula M. Norton (3)	37,400
Lauren Fay (1)	11,200	Vivian Fay (3)	35,600
Lillian B. (3)	36,600	Wamsutta (3)	34,600

90,800
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Owner-Captain Chet Carlson beside his new Allis-Chalmers 21000 turbocharged power plant. At normal cruising speed of 10 knots, engine turns 1650 rpm; at top speed of 11 knots, 1850 rpm.

"I've never seen anything start and perform like my new Allis-Chalmers 21000 diesel"

... says Chet Carlson, skipper of the "Jinny C"

Carlson's 75-ft dragger, the "Jinny C," now cruises at 10 knots — 25 percent faster than before — and further, says the captain, "Our fuel bill does not run any more per trip with our new Allis-Chalmers 21000 than it used to for the old engine, even though we go faster and farther and have power to spare."

Let performance and economy be your guide. Choose the engine that starts easier, performs better and saves fuel. Like Capt. Carlson, you'll be glad you paid a visit to your Allis-Chalmers dealer. Allis-Chalmers, Milwaukee 1, Wisconsin.



The dragger "Jinny C" operates out of Seattle, Washington.

ALLIS-CHALMERS
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BM-42

New Bedford Fish Landings

Adventurer (4)	93,000	Lynn (3)	33,600
Agda W. (2)	26,500	Major J. Casey (3)	78,500
Althea (3)	61,800	Malvina B. (3)	48,300
America (1)	19,000	Marie & Katherine (2)	40,700
Anastasia E. (3)	43,700	Martha E. Murley (4)	80,300
Annie Louise (3)	36,500	Mary E. D'Eon (2)	41,400
Annie M. Jackson (3)	80,100	Mary J. Landry (3)	64,300
Arnold (3)	31,500	Mary Tapper (3)	84,100
Austin W. (3)	58,600	Midway (3)	89,100
Barbara M. (3)	66,600	Minkette (1)	9,500
Brent (3)	51,500	Miriam A. (3)	81,600
Cap'n Bill II (2)	79,200	Molly & Jane (3)	65,400
Capt. Deebold (3)	57,500	Nancy L. (2)	30,800
Carl Henry (2)	62,000	Nautilus (2)	117,400
Catherine & Mary (3)	70,400	North Sea (2)	34,700
Charles E. Beckman (4)	62,000	Pauline H. (3)	212,500
Christina J. (2)	58,000	Pearl Harbor (3)	45,300
Christine & Dan (3)	68,500	Phyllis J. (4)	67,500
Comber (3)	59,600	Richard Lance (1)	9,000
C. R. & M. (2)	57,900	Roann (1)	14,000
Curlow (6)	59,200	Robert Joseph (3)	98,400
Elizabeth N. (2)	77,000	Robert Anne (3)	89,000
Eugene H. (1)	13,000	Rush (3)	75,800
Fairweather (1)	11,200	Sea Gold (2)	29,400
Falcon (3)	64,500	Sea Ranger (4)	114,300
Friendship (2)	58,600	Sharon Louise (3)	81,000
Gannet (3)	151,100	Skipjack (3)	127,000
Gertrude D. (1)	17,300	Smylyn (3)	50,700
Glenn (1)	84,800	Solveig J. (3)	153,700
Growler (3)	89,900	Stephen R. (2)	52,600
Harmony (3)	49,000	Sunbeam (2)	40,800
Henric (1)	69,500	Susie O. Carver (4)	52,900
Hope II (3)	49,160	Teresa & Jean (3)	146,000
Huntington Sanford (1)	15,000	Theresa (1)	20,600
Invader (3)	121,000	Three Bells (2)	21,500
Ivanhoe (3)	60,100	Tip Top (2)	14,300
Joan & Ursula (3)	50,200	Two Brothers (3)	28,400
John C. Murley (2)	127,800	Val T. (3)	90,000
Julia DaCruz (2)	17,900	Valiant Lady (1)	28,700
Katie D. (2)	134,000	Venture I (1)	37,500
Kelbarsam (1)	12,200	Viking (3)	116,200
Libby (3)	89,000	Villa-Riall (1)	23,400
Lorine III (2)	31,500	Whaler (3)	129,600
Louis A. Thebaud (1)	12,500	Whaling City (3)	68,300
		Winifred M. (3)	27,100

NEW YORK

Carol-Jack (1)	55,000	Tina B. (3)	171,500
Evelina M. Goulart (2)	147,800		
Scallop Landings (Lbs.)			
Beatrice & Ida (3)	33,200	Maridor (3)	32,600
Carol-Jack (2)	23,200	Muskegon (1)	10,200
Enterprise (3)	34,200	Norseman (1)	11,000
Felicia (3)	35,400	Phyllis J. (2)	22,000
Karina T. (1)	10,500		

Multipurpose Fishing Boat

(Continued from page 10)

engine. Around both exhaust lines is a welded casting with 2" of air space, through which ventilating air is expelled from the engine room.

The mast is also used in lifting and handling nets such as Danish seines and mackerel and herring seines. It also carries identification lights and deck lights. The forward mast is of Douglas fir and rises to a height of 24' above the deck. It has a 10" diameter at deck level and a 4" diameter at the top. It carries running lights, identification lights, antenna, lifeboat launching gear, ship's horn, etc.

Summing up advantages gained by construction of the *Unique*, the Director of Fisheries for the Nova Scotia Government, Brian Meagher, said: "Although it cannot properly be termed an inshore boat within the reach of every small fisherman, it is, nevertheless, a boat that can be built—without several experimental features it now contains—for a reasonable amount. It could prove itself a good alternative in some areas to the more expensive 60' dragger or longliner, and is one step forward in the admittedly difficult process of designing for the smaller fisherman a versatile, seaworthy boat of medium size with low capital and operating costs."

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Samson Cordage Works, 470 Atlantic Ave., Boston 10, Mass.

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HERRING MEAL WITH NO TASTE or odor whatsoever, and intended to be mixed 1-10 with flour for baking bread and rolls, can be produced by a method perfected by the Norwegian Fishery Directorate's Ocean Research Institute in Bergen.

JAPANESE FISH MEAL FLEETS will be doubled in the Bering Sea for the second straight year. This year, four companies will operate fleets with a total of more than 100 boats.

They hope to take 53,500 tons in the four-month season. The Japanese think this year they are nearing the limit for fishmeal operations in the Bering Sea.

ENGLAND'S STERN TRAWLER *Universal Star* continued fishing in stormy weather recently, when standard trawlers had given up. Her skipper stated that during the 12 days' trip in bad weather, 43 drags were made.

He said that for comfort the new *Universal Star* is ahead of the standard type trawler. She is claimed to be steadier than the regular type and ships no water.

Apart from adjustments to the head rope, etc., smaller doors are now being used. The new doors are approximately 7' x 3'6" compared with the standard 10' x 4' type, and have about three quarters the weight.

JAPANESE SALMON TAKE has been further restricted by Russia in Soviet-controlled North Pacific waters. Under the fourth annual salmon-fishing agreement the Soviet Union compelled Japan to accept a catch limit of 67,500 tons for the 1960 season—12,500 tons less than last year and nearly half the 120,000 ton limit of 1957.

In addition, "no-fishing" areas, already encompassing the Okhotsk Sea, were extended to zones west of the Kuriles and the Kamchatka Peninsula.

The newly banned area is considered a greater blow than the catch reduction as it is especially rich with salmon in the latter half of the season.

ECUADOR TO PERMIT FISHING by foreign vessels in its continental and insular territorial waters if they obtain permits. This does not include taking codfish, shrimp, lobster, or whales.

Foreign fishing vessels are required to submit to Port Captains detailed reports of catches, including amount, species, and locations.

The permission is granted to legalize fishing by foreign vessels within the one-kilometer limit and to derive revenue through the sale of fishing permits.



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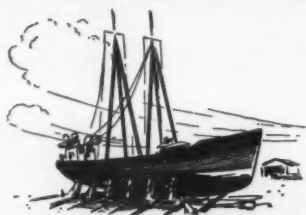
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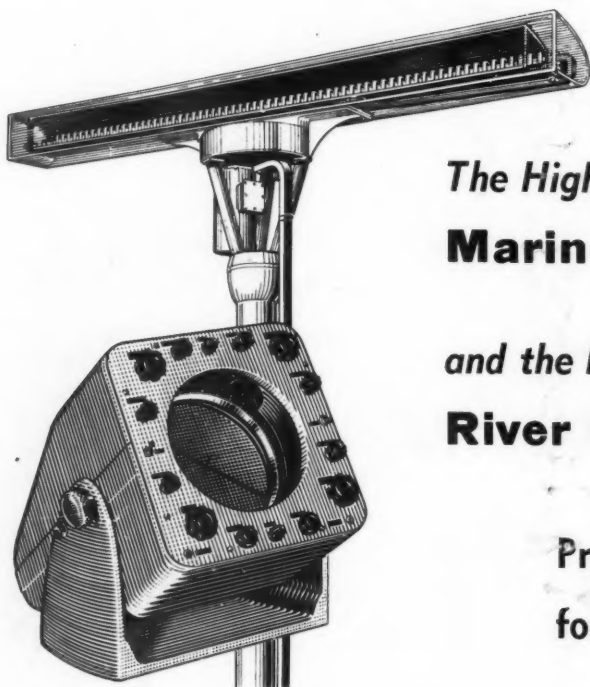
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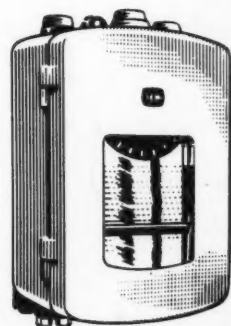
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